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CENTAUR 1938.

The profession we hope one day to enter, strangely enough occupies a paradoxical position in relation to modern economic life. For its own efficiency it must employ every new and applicable scientific advance, but at the same time, direct this towards the preservation of the old order.

The situation is unique and one that must always be carried in mind. While the mechanical brains of the world are striving to supersede the animal by machines and synthetic products, veterinarians are vitally concerned in the improvement of livestock, so that animals cannot be discarded as obsolete. Our functions here concerns not merely disease, but animal production, which has been sadly neglected in the past.

It is true that a certain ratio of food animals to population must always exist, but that ratio may in the future, prove much lower than at present, if synthetic foods are developed. This alone would reduce the veterinarians sphere of influence.

Questions of power on farms and wool production are more immediately vital. Without doubt veterinarians have a scope in the production of wool cheaply, to compete with artificial fibres, from the nutritional, property management and genetical viewpoints as well as in controlling disease.

Concerning the horse, it is in our interest to be quite reactionary, as this animal represents a big section of veterinary work. By boosting the horse far and wide, we would be doing something very selfish, were it not that the horse still is the most economical source of power on all but the largest farms, where the Diesel is probably supreme. In wanting a return to the horse as farm-power, veterinary folk are reactionary to modern mechanical progress, but are also being quite fair and honest to the nation.

A great essential is, however, to retain a tolerant attitude to any of the modern trends, adverse in nature, to the veterinary profession. We have a role in the country that can be performed more usefully by exerting a quiet influence in the desired direction, than by allowing violent prejudices to develop, which can only mar our judgments.

CONTRIBUTIONS.

An item for reflection is that "Centaur" is only as strong as its contributors. We have been disappointed, not in the number of articles offered this year, but by the lack of quality in them. As a faculty, we pride ourselves on a fine sense of humour, yet there are very few touches of comedy in this issue. Every one of us is old enough now to have read some miles of first-class printed matter, so that there is little excuse for a failure to pen words in a lucid style, and centred on attractive
subjects. The type of article admired by the budding writer during the course of his general reading, is the model of the one he should present to "Centaur." To string out a series of events in the painful manner of a duty letter to an aunt, is merely waste of time. Also "Centaur" must fail unless men in the faculty discover they have something worthwhile to write about and set it down with the minimum of words.

A sincere regret is that so many of Final Year have failed to contribute. By reason of the education received and contacts made, in the course of time spent in the school, they, more than anyone else, should be able to write well for "Centaur." Instead, this year, the response has been trifling. Only three members have had a pet subject worth airing, whereas there are at least half a dozen others who could have prepared very interesting original articles, because of their past experience in certain spheres, about which the rest of us know very little. And this is to say nothing of the literary ability of the remaining members of the year.

We wish to extend our thanks to this year's contributors, student and graduate alike. The articles printed will prove of great interest to many, and most of them are free of the faults mentioned. Small as it is, "Centaur" has been able to afford a W.P.B., but unlike the editors of tradition, we have found little pleasure in using it.

---

RETROSPECT.

Four years I spent
Dragging writing paper
Into dull lectures, trying
Not to fall asleep, and praying
For some odd-looking clock
To creep round the hour
A little faster.
Four years I spent
With never time to read
Fine books, or listen to great
Music, or see more than an
Odd good play or film.
No time to dream, or learn of politics
Or a foreign tongue.
Four years I spent
In poverty, and made
To lead an ineffectual
Narrow life, under the awful
Black, remorseless, cruel and
Senseless, mad god called
"Examinations."

T.K.E.
McGARVIE-SMITH ANIMAL HUSBANDRY FARM.

Official Opening, 8th September.

THE DEAN’S SPEECH.

In the curriculum of the Faculty of Veterinary Science, Animal Husbandry is a very comprehensive subject, as it not only deals with the care and management of all classes of livestock, but it embraces the many aspects of animal production and includes systematic instruction in breeds and breeding, feeds and feeding, and the market requirements for milk, beef, mutton, fat lambs and wool.

The importance of Animal Husbandry to a country depending so largely upon animal products for its revenue as Australia does, needs no emphasis to a gathering such as this, but one may be permitted to stress the fact that maintenance of our national prosperity will be influenced not so much by increasing our flocks and herds as by improving quality and reducing cost of production, so that our products may successfully compete with the best of other countries at a price acceptable to the consumer. In this manner, existing markets can be developed and new markets be created on a permanent basis, and advancement along these lines urgently calls for the application of scientific knowledge and the prosecution of research.

It is precisely in this connection that the McGarvie-Smith Animal Husbandry Farm will prove a valuable asset not only to this State, but to the whole of Australasia, since students of the Sydney Veterinary School come from all States in the Commonwealth as well as the Dominion of New Zealand, as it will provide additional facilities for the more complete training of veterinarians; the officers to whom stockowners look for guidance in the adoption of modern methods in production and for protection against losses from disease and pests.

While the location of the Sydney University Veterinary School within the University grounds has many inestimable advantages, it has not provided opportunities for students to gain requisite experience in certain branches of animal husbandry. To make good this shortcoming, it has been our practice to hold demonstrations at various shows, studs, dairies, etc., within the metropolitan area, and to take certain classes each year, by permission of the Department of Agriculture, to the Hawkesbury Agricultural College during vacation periods for practical instruction under their Lecturer. In addition, all students are required to produce before sitting for their final examinations, evidence of having spent at least six months in gaining further practical experience. These provisions have undoubtedly proved helpful, but it must be admitted that they do not supply all that is desired. The establishment of the McGarvie-Smith Animal Husbandry Farm will definitely remove our difficulties in this connection, as all students will now enjoy full opportunities to become proficient in this important branch of their training.

The Farm, which comprises 400 acres, has been cleared and subdivided into convenient paddocks. Four large dams have been constructed to conserve water, a reticulation system installed, and a number of tanks and drinking troughs erected. About 200 acres have been cultivated and the crops grown have been conserved as hay, silage or grains. Both tub and pit silos are being used. Some thirty acres have been laid down as permanent pasture, and in the course of time, the whole of the pasture will be improved. In addition, a number of buildings and yards have been erected. One building provides comfortable quarters for some thirty students at one time, as well as for members of the staff. Also, there is the dairy and milking bails, bull paddocks, calf house, piggery, stables, barn and machinery shed.

To provide the requisite training, flocks and herds are being gradually acquired. A start has been made with a dairy herd of some twenty odd
Jersey cows and heifers carefully selected for production and tested free from tuberculosis, mastitis and contagious abortion. Sir Archibald Howie kindly presented us with a cow and heifer of the famous Yaralla Stud as a nucleus and has also placed at our disposal one of his pedigree bulls. Other cows and heifers have been obtained under favourable conditions from the Kamerooka Estate, specially selected for us by Mr. Taylor, and the remainder of the herd was purchased from Messrs Brown Bros., well-known Wollongully Stud. For our piggery, Sir Frederick Stewart has presented us with three pure bred Tamworths, which will be used for crossing with Berkshires. A number of active farm draught horses and several hacks have been purchased, mostly mares to be bred from. The poultry unit has not yet been built. For instruction in sheep and wool, the flocks of the F. D. McMaster Research Farm are available.

In order to obtain the desired degree of co-operation by instructors and proper co-ordination in the instruction given, the work of the farm is being controlled by a Board of Farm Studies, consisting of the Lecturers directly concerned together with the Officer-in-Charge of the F. D. McMaster Research Farm and the Chief Veterinary Officer of the Department of Agriculture. Dr. Carne has acted as Secretary to this Board and relieved me of most of the routine work in connection with the establishment of the Farm. In fact, the enthusiasm he has shown would seem to indicate that he has adopted the Farm as a special hobby.

Students are going into residence at the Farm in convenient groups up to 30 in number during vacation periods and at week-ends under the control and direction of responsible University officers, and are receiving special demonstrations by experts in particular branches of the work. Each group is divided into four main sections namely, dairy and piggery, horses and stables, sheep and wool, farm work and pasture improvement. The training students receive will supplement the lectures given in the classroom and is definitely of a practical nature. It includes milking both by hand and machines, testing, recording, interpretation, rationing for production, grooming, harnessing, riding, driving, horse-shoeing, mating, lambing, marking, dipping, jetting, shearing, crutching, wool sorting, fertilising and pasture improvement.

In this manner the students have exceptional opportunities to acquire sound knowledge in all branches of Animal Husbandry.

In connection with this training, there is an active co-operation with the staff of the F. D. McMaster Research Farm, and much importance is attached to the assistance Dr. Kelley and his staff are rendering.

Advanced students are also benefiting from a close association with the investigations being carried out under field conditions by the McMaster Laboratory of Animal Health of the Council for Scientific and Industrial Research, and the close co-operation which exists between the Veterinary School and the McMaster Laboratory is thus further strengthened. Final year students will also profit greatly by being able to add to their training in obstetrics, as there is a large population of dairy cows in this district.

The opening of this Farm marks the realisation of a long cherished desire, and the fact that the Farm has been named to perpetuate the memory of one who was largely instrumental for the vaccination of our flocks and herds to protect them from the ravages of that fell disease Anthrax, makes the realisation even more pleasing.

HORSE JUDGING.

To become a proficient judge of horses is worth striving after. The attainment gives its possessor personal satisfaction, the necessary information for use in breeding, buying, selling and management of horses and enables him to help his fellowmen by counsel in horse matters, or the selection of prize-winners in the show ring. Masters of the art wield a mighty influence on the horse breeding operations of the country.—Wrote A. S. Alexander, D.V.Sc., nearly 30 years ago.
AN APPRECIATION OF THE HORSE.


In this Mechanical Age, when young Lochinvar escapes the outraged parent’s wrath in a high-powered car, when impatient lovers sigh no longer for the wings of the dove, but charter instead an aeroplane and when the Spirit of Romance and Adventure is fast becoming inseparable from motor spirit, it is well that we pause awhile and spare a thought for that noble friend of mankind, the horse, becoming rarer no doubt in our daily lives, but imperishably enshrined in our literature and our affections.

What can we compare with the thrill of a gallop? Let us hear that stout old Christian, George Borrow, describe his first ride.

“Oh, that ride! that first ride! — most truly it was an epoch in my existence; and I still look back to it with feelings of longing and regret. People may talk of first love — it is a very agreeable event, I dare say — but give me the flush, and triumph, and glorious sweat of a first ride, like mine on the mighty cob! My whole frame was shaken, it is true; and during one whole week I could hardly move foot or hand; but what of that? By that one trial I had become free, as I may say, of the whole equine species. No more fatigue, no more stiffness of joints, after that first ride round the Devil’s Hill on the cob.”

Can the comfortable, indolent shifter of gear-handles read Borrow’s words without some vague misgivings that he is becoming a symbiont of Machines, and is drifting out of communion with Nature, whose noblest creation is the horse.

He comes of an ancient lineage compared with which Man is a mere upstart. His genealogical tree can be traced back in fossilized remains until we reach his earliest recognisable ancestor in rock layers that can be estimated by several mutually confirmable methods at about 30 to 40 million years old; long aeons before the first man-like creatures began to acquire the divine spark that was to lead them to develop reasoning brains and to conquer the world.

It is hardly necessary to do more than remind readers of the dainty little Eohippus, no bigger than a medium-sized terrier, that roamed the forests of America in that distant epoch, with his four tiny hoofs on the fore-feet and three behind. Then, as he left the soft wet forests for the hard dry plains, we find an unbroken series of evolutionary stages to the horse of to-day. A million years ago, when the horse had reached a stage not markedly different from the horse of to-day except in details of proportion, representatives crossed the land bridge from America to Asia and thus reached Europe. Yet, when the Spaniards discovered America, not a horse was to be found within 43 years. Why they disappeared we do not know: flesh-eating pumas or some unknown pestilence has been suggested. They were re-introduced to the Americans at Buenos Aires in 1535 by the Spaniards and, becoming wild, reached the Straits of Magellan.

The horse has been known in Egyptian art for nearly 40 centuries. The Assyrians painted and sculptured him long before the Egyptians, and it appears that they became acquainted with him from the Aryan Persians, a nation of horsemen. Yet the Persians were not the first men to mount a steed.

Excavations prove that our Cave-men ancestors rode and even ate the horse. From ancient times he has been used in warfare, first for pulling chariots, later for carrying armed men. It was for this purpose that our largest horse, the Shire, was developed in England, and indeed, he needed to be strong for the armoured knight of old was like a miniature fortress. A Chinese military treatise dating from the reign of Hoang-Ti (2637B.C.) places cavalry on the wings of the army. That war-horses were used from early times by the ancient Hebrews, we gather from the book of Job. But, with the March of Progress, some would deny the horse even his traditional right to carry the instruments of carnage over the battlefields. Even Death
cries "More speed, more speed!" and begins to desert the horse for the armoured car and the tank.

The ancient Romans, and especially the Greeks were skilled horsemen, and feats of horsemanship were prominent in their games. They used no stirrups, but bridle and bit, riding bareback or on a cloth or skin strapped to the horse. We recall, among other horse myths, the legend of the winged horse, Pegasus. The terrors of the early Greeks when they first beheld the mounted barbarian Persians lives on in the myth of the Centaurs, whose honoured descendant, Chiron, adorns the cover of this Journal.

The horse has been associated with funeral rites of primitive peoples, who imagine that man must continue to enjoy after the grave what he enjoyed on earth. Accordingly, it is said that the Patagonians of South America kill horses at the grave that the dead may ride to the country of the dead. Even as late as 1871 in Poland, Casimir's horse was slain and buried with him and no doubt our old custom of leading a dead soldier's horse in the funeral cortège is but a lingering relic of this ancient rite.

But few Australians will be satisfied with an article on the Horse that does not discuss the racehorse. If we have a reputation as a nation for the pernicious vices of "shouting" and frequenting race courses, let us at least flatter ourselves that they spring from an innate appreciation of two admirable things—good fellowship and a good horse. The horse's place may be usurped by the Machine, or, rather let us say, he may be emancipated from the drudgery of common toil, and consequently he may be drifting out of our economic life; but from our recreations and affections, never. To illustrate this, it is a source of understandable chagrin to the indefatigable curators of the Melbourne Museum that their highly interesting zoological exhibits are quite deserted by the large crowd that gazes in admiration on the reconstructed effigy of Phar Lap.

The racehorse of to-day is a composite animal. The Romans introduced some horses of lighter build than the native of English horses. Later, King Athelstan introduced running horses from Germany. A great influx of Spanish horses then followed.

William the Conqueror's horse was of the Spanish breed and others of the same kind were introduced by the barons on their estates. It is said that in 1121 A.D., two Eastern Horses, Barb and Morocco, were imported. The Crusades, of course, gave great opportunity for the introduction of new blood. King John gave much encouragement to horsebreeding, one of his earliest efforts being to import a hundred Flemish stallions. Edward III. was similarly a great horse-lover; he procured fifty Spanish horses. The introduction of carriages as a means of transport, instead of horseback, and also the decrease in the weight of armoured men, following the introduction of gunpowder, led to the development of a lighter type of horse. Queen Elizabeth was an accomplished horse-woman. In the first year of her reign she revived an old Act of Henry VIII., making it a felony "to sell exchange or deliver within Scotland or to the use of any Scottish man, any horse"; but this was very naturally repealed by James I. Under him several Barbs are said to have been brought to England by Sir Thomas Edmonds. The Markham Arabian was purchased by the King but proved a failure at racing and at the stud. According to Gervose Markham there were in England, at that time, horses which could hold their own against all foreign importations. It is to King Charles II., that is due the foundation of the present thoroughbred. He commissioned his Master of the Horse to go abroad and bring back some well-bred mares. Eight mares are said to have been purchased, six Barbs, one Arab and one Turk.

These Mares, together with other English bred mares in the Royal stud, were known as the Royal Mares and were the foundation of the English stud book. About 176 eastern sires were imported from the time of King James I. These were mated not only with imported mares, but also with English-bred mares. Three eastern sires have had a particularly strong influence on the thoroughbred.
(a) Byerly Turk, owned by Captain Byerly and imported in England in 1689, from whom was descended Herod.

(b) Darley Arabian, purchased in Aleppo by Mr. Darley for his brother in 1702. The great great grandson of Darley Arabian through Flying Childers was Eclipse from which, in a direct line, was descended Persimmon sire of Comedy King.

(c) Godolphin Barb was purchased in Paris somewhere near 1728 and presented to Lord Godolphin. He was the direct ancestor of Natchem.

For about one hundred and fifty years the thoroughbred has been bred without admixture of alien blood, and during that time it has been subjected to the most rigorous system of selection through individual trials of strength and endurance.

Whether the racehorse of to-day is as good as the stock to which he traces back has been disputed, chiefly because he is brought to more early maturity, commencing to win races at two years instead of five, as in the days of Childers and Eclipse; but the highest authorities have insisted he can not only stay as long as his ancestors, but also go a good deal faster.

Over 10 million generations of natural selection, and perhaps 2000 generations of directed evolution have made of the primitive Eohippus, the beautiful modern horse. It is the veterinarian's privilege to guide him to health and tend him in sickness. Though no longer so important as formerly in our economic life, he will long continue to occupy a high place in our esteem as a joyous play-fellow and faithful servant. Undoubtedly, being equipped with intelligence, judgment and mobility, and being able to draw his energy requirements from the countryside, he will long continue to play his part in warfare, sad commentary on Man's stupidity.

MY ODE.

"VENERABLE VETERAN or VERITABLE VETERINARIAN?"

"The Sands of Time are sinking,—"
Well, let the blighters sink!
This is what I've been thinking
While sinking my blinking drink.

("—Thinking, and sinking this drink.)

Now the "Annuals" come, and the "Annuals" go,
And many good men they perturb,
But do they ever upset me? — No! —
For I'm a "Perennial Herb."*

—A hardy perennial herb.

Far's I'm concerned they're just a farce;
Tho' maybe my logic's weak,—
If they don't pass me, — Huh! — I let 'em pass!
Sort of turning the other cheek.

—Aye, that's turning' other cheek.

The Wheels of Time relentless roll,
And many of us do fail,
While some, who strive, may gain their goal,
Some others might go to gaol.

—Might finish by going to gaol.

Sure as rise of sun and its subsequent set
My "work undone" doth greater get,
But mark my words, I'll get there yet.
'Tho I may be a veteran 'ere I'm a Vet.!
—A veteran 'ere I'm a Vet.

Sans apologia,

BETA ORIONIS.

*Thyme mooches on.
PHOTOSENSITIZATION.

T. K. Ewer.

With special reference to its manifestation in Sheep.
Condensed by J. W. Evans.

[This essay won the Dean's Prize for 1937. Ed.]

In Australia, there occurs among sheep, two different clinical manifestations of a photodynamic phenomenon — viz., nonicterogenic photosensitization and icterogenic photosensitization. Both are due to the ingestion of various plants. Although the combined direct loss throughout the Commonwealth is probably not very great, yet indirectly through interference with growth both in body weight and wool, and through a general lowering of the animal's resistance, it must amount in the aggregate to a very large amount annually.

Eidinon has defined photodynamic sensitization as "the mechanism by which the chemical reactions or composition of the living cells may be altered following the exposure to light rays, which normally in themselves have no specific chemical or biological action." By using selected chemical substances, such as metallic salts, organic dyestuffs as sensitizers, it is possible to sensitize living cells to infra red, luminous and ultra violet rays. In photosensitized reactions, the sensitizing substance acts as the light absorber and, while remaining itself unchanged, brings about reactions of other parts of the system which themselves are not affected by light. Since only that amount of light which is absorbed can produce chemical change, the active radiation is limited to those wave lengths which can be absorbed by the sensitizer.

The molecules of certain substances, mostly fluorescent dyes, on being irradiated by light of wave lengths corresponding to their absorption spectra, undergo a physico-chemical change, and become activated. These activated molecules initiate profound alterations in intercellular metabolism. The changes have been shown to be irreversible. It has been indicated, however, that wave-lengths other than those absorbed by the sensitizer may have a direct destructive effect on living organisms. Radiation with ultra-violet light especially of wave-lengths less than 290 m.m., brings about such destructive action in biological systems, which is similar in type to photodynamic effects. Sensitization to wave lengths in the ultra-violet by sensitizers absorbing in this region is, of course, possible.

A considerable bulk of evidence points to the nature of the photodynamic process being an oxidative one. In fact, it would definitely appear that, once the required conditions of sensitizer and appropriate radiation commence to exert their effect upon the cell, it proceeds as a simple monomolecular oxidative reaction. This fact separates distinctly the photodynamic process from the lethal action of ultra violet rays, for the latter may occur in the absence of oxygen.

The point at which these oxidations are effective in the cell is still obscure. Cell proteins may play an important part. There is evidence also to indicate that oxidation of such easily oxidisable substances as tyrosine and tryptophane is possible in the cells. It does not prove, however, that these amino acids are the point of attack, or that other readily oxidisable substances; e.g. sterols, might not be oxidised first.

Manifestation of the Photodynamic Phenomenon.

In all cases, the method whereby an animal becomes photosensitive is by exposure to the sun's rays following ingestion of certain plants which either contain an active sensitizer or from which a sensitizer is formed as a break down product. With some photosensitizations, there is an allied icterus — in others there is not. This serves as a convenient classification.

Non-icterogenic Photosensitization.

St. John's Wort.—Hypericum perforatum var. angustifolium — is probably the plant whose ingestion causes greater and more constant loss in sheep, than any other single plant. It would appear that it is only
in Australia and the South Island of New Zealand that *H. perforatum* var. angustifolium is a serious pest, although there is some fear of it at present in Canada. In New Zealand also, three or four other species are suspect of causing facial dermatitis, viz.: *H. calycinum*, *H. Androsaemum* and *H. gramineum*.

**Toxic Effect.**

The following account of the aetiology may be taken as typical:—As the first clinical manifestation there is considerable erythema and oedema of the subcutis, followed by the exudation of plasma. This coagulates in clear, yellowish masses, after matting the wool together. The animal bites at the skin on account of the irritation, or rubs itself against solid objects. As a result, the wool is removed, particularly on the face, legs and loins, such places becoming raw and eventually scabbing over. The eyelids, ears, lips and nostrils become markedly swollen and later covered with scales. Sometimes the ears become badly torn, due to the persistent rubbing by the animal. The eyes may become affected, an opacity of the cornea developing, at times leading to total blindness. Some animals show central nervous lesions, leaping suddenly into the air, and rolling over and over. Sheep may succumb very soon after such convulsive seizures, but the majority do not die, though marked loss in condition occurs. Ears may slough completely and a concomitant interference with the wool growth is shown. Stock-owners report that it takes 48 hours for photosensitization to develop after the sheep are turned into an affected paddock.

Experimentally, it has been shown that the active principle is resistant to:

(a) Drying in the sun.
(b) Drying at 200° F. for 60 hours.
(c) Autoclaving at 110° C. for 2 hours.

Czerny first isolated from *Hypericum* plants a red fluorescent pigment "Hypericin" which photosensitized white rats when injected into them. Spectrascopic examination of an alcoholic extract revealed the usual chlorophyll spectrum and super-imposed were the two "hypericin" bands at 6060-5700 A and 5580-5540 A.

**Trefoil Dermatitis.**

This condition is due to ingestion of *Medicago denticulata* and is commonly erroneously termed "aphis disease." It is a typical photodynamic reaction similar to that caused by *H. perforatum* although as yet, no effort has been made to determine the aetiology of the condition.

**Clover Disease.** Photosensitization, especially of cattle, has been reported from European countries. The cause is thought to be Alsike Clover (*Trifolium hybridum*) and in some cases Red Clover (*T. pratensis*).

**Fagopyrismus.** Dermatitis resulting from ingestion of buck wheat (*Fagopyrum esculentum*). The plant pigments responsible for the photosensitization are fluorophyll or phylloporphrin.

**Sudan grass** (*S. sudanensis*) has been observed to cause similar condition among sheep in California.

**Icterogenic Photosensitization.**

In South Africa, there occurs a condition of sheep characterised by the usual manifestations of photosensitization, along with signs of clinical icterus. There is much evidence to prove that feeding on *Tribulus terrestris* is the cause. This condition is termed "gelldikkop" and the conditions favourable to its development are that the first spring rains should bring on a quick luxurious growth of *Tribulus*, and that following this, there occurs a dry spell. If no dry weather follows, then little or no gelldikkop occurs. In addition to erythema and exudation of tissue fluid into the subcutis the symptoms of general icterus indicating cholaeoma and fever are seen.

The true nature of the sensitizing agent has been established. Phylloerythrin — a break down product of chlorophyll — was obtained from the bile of sheep with biliary fistulae. When injected into sheep, this substance produced photosensitization, but not icterus. The site of formation of phylloerythrin is in the rumen, under the combined action of bacteria and infusoria.
“Dikour” is a similar condition in S. Africa to gelldikkop and it appears that Panicum spp. at certain stages of growth are likely to cause the condition.

In New Zealand, for some years, an increasing mortality among young sheep has been observed, and it is believed that Panicum spp. at certain stages of growth are likely to cause the condition, “facial eczema,” showing symptoms of acute photosensitization, the skin along the length of the back frequently being affected. Icterus also occurs. Facial eczema occurs mainly in the North Island. Considerable liver damage and thickening of the bile ducts of affected sheep is also found.

In New South Wales, Yellow Bighead generally makes its appearance in 2-6 days, following the fall of rain after a dry spell. Although all sheep are susceptible, the condition is most common at 4-12 months of age. While exposed to the sun’s rays, the sheep show intense irritation and anxiously seek shade. A sticky mucoid, foetid discharge comes from the mouth, eyes and nose. The urine is thick and yellow and the faeces are solid and mucus-covered.

Post-mortem congestion of the liver and kidneys is found, together with evidences of bowel stasis and congestion of the colon.

As yet, only giant panic grass P. decompositum has been incriminated. In the drier western parts of the State, it is the first to grow rapidly following rain.

Control measures. These depend on a recognition of the pathological picture described.

If St. John’s Wort is the cause of the condition, then the weed must be controlled either by poisoning with sodium arsenite or sodium chlorate, or by biological methods, such as pasture improvement or the running of black faced or black sheep on affected country.

Careful flock management also must be adopted. Adequate shade must be present in affected paddocks. At flush periods, young growth of M. denticulata should only be fed to dark coated cattle, black sheep or cut for hay or silage.

In cases where icterus develops as in facial eczema, it has been recommended that for 10-14 days new sheep should be kept away from any new feed, resulting from rain following a dry spell. Suitable shade in all paddocks is again indicated.

In treating these conditions, whatever may be the cause of the photodynamic effects, the initial step is to place affected animals in the shade. Carron oil may be applied to prevent hardening of the skin, which can also be sacrificed if the oedema of the face and ears is marked. It is then usual to apply a mixture of soot or lamp-black, incorporated with an oily base to the affected parts. In cases of Yellow Bighead, since there is evidence to suggest that bowel stasis is responsible in some degree for the initial liver damage, a purgative drench should be administered.

It is suggested that Yellow Bighead exhibits the symptoms of photosensitivity, because of the increased excretion of phylloerythrin within the sheep’s body, allied to conditions predisposing to a degree of biliary stasis. The possibility that Clover Disease and Trefoil Dermatitis may have the same cause cannot be excluded, as the high chlorophyll content of the plants associated with these conditions is well-known.

**BUDDING VETS., PLEASE NOTE.**

A machine is a great moral educator. If a horse or a donkey won’t go, men lose their tempers and beat it; if a machine won’t go there is no use beating it. You have to think and try till you find what’s wrong. That is real education!

By GILBERT MURRAY in “The Listener.”
THE SCOPE OF ARTIFICIAL INSEMINATION IN ANIMAL HUSBANDRY IN AUSTRALIA.

By R. N. SANDERS, B.V.Sc.

Artificial insemination of females differs from natural coitus, chiefly in two ways. The male is caused to ejaculate either naturally or artificially and the semen so collected is placed by mechanical means in the female genital tract.

Methods of collection of semen and the subsequent treatment, storage and insemination, are far too lengthy subjects to be dealt with in any detail here. Spermatozoa are sensitive to very narrow ranges of temperature and chemical variation. Metallic oxides, rubber, water, sunlight, air, heat, etc., are all injurious to them. Hence instruments and containers should be preferably of glass and perfectly clean. After collection, the semen should be used immediately or stored at 4°C in small tubes with slight exposure to air. Best results are obtained when semen is used as soon as possible after collection. It is important that the female should be in oestrus, preferably in the later stages. She is then suitably restrained. A speculum is inserted into the vagina and the spermatozoa injected by means of a glass syringe, with a long glass or ebonite nozzle through or into the cervix. Russian workers have obtained good results by injection into the anterior end of the vagina, but in this case a greater amount of semen is required than by injecting direct into the cervix. Injection into the uterus is not commonly practised, especially in the ewe, on account of the difficulty experienced, in passing a nozzle right through the cervix.

Artificial insemination was first used as an experimental procedure and in the treatment of sterility. It is most successful as a means of impregnating shy-breeder, or where there is any abnormality of the external uterine opening or of the vaginal secretions. The method has been used extensively for unusual crosses, where there is any discrepancy in the size of male and female used, as well as in the production of hybrids, the parents of which do not normally mate. It prevents valuable sires becoming infected with contagious diseases (e.g. Dourine), and also prevents the spread of a disease such as Infectious Vaginitis, where the male may act as an intermediary.

Little was known about artificial insemination in animal husbandry until Iwanoff and his co-workers in Russia perfected the technique. From a small beginning, its use increased until in 1929, 250,000 mares alone were inseminated in Russia. In 1931, one bull sired over 1,000 calves. The chief feature of the method is the conservation of the sire. The ejaculate, usually devoted to one ewe can be spread over up to 40 ewes. Where high class sires are few, this is a most important factor. Moreover, it is of great value in the use of proved sires. For example, it takes three or four years to prove that a bull is capable of getting high-producing daughters,
Artificial insemination offers a means of utilising the remainder of his sexual life to the utmost advantage, without any undue strain on the bull himself. Again, good sires that have become too fat or incapable of service may, providing their semen is quite normal, be still utilised by collecting the ejaculate artificially.

Since semen can be stored for some days and yet be capable of fertilisation it may be transported great distances, thus giving the breeder a greater range of sires without the actual expense of buying or transporting the actual animal. Last year, both bull and ram semen was successfully transported between New Zealand and Australia. This may open up many new possibilities. Once a valuable sire is sold overseas, not only is he expensive to buy and transport, but his value is lost to the country of his origin. It is possible with artificial insemination to send the semen rather than the sire overseas.

Artificial insemination proved invaluable to breeders of the silver fox. As these are monogamous, breeding in captivity necessitated keeping a male for each female, but with artificial insemination, one sire can be used for several females.

Before a female is inseminated, the semen can be examined microscopically, and its morphology noted. Thus possible lowly-fertile males can be detected and readily discarded.

From the above brief survey of artificial insemination and some of its possibilities, it would appear that a new era in animal husbandry was about to commence. This has already happened in Russia, where many hundreds of thousands of animals have been successfully inseminated. Why, then, has this not occurred in Australia? It must be remembered, that for many years, Russia was in the throes of internal and external upheavals. Its livestock was forgotten, and consequently regressed in numbers and quality. Artificial insemination and work on similar lines constituted their sole salvation. The former offered a means of rapidly improving the type of animal by utilising the few better type sires to the utmost. To do so, it necessitated the perfecting of the technique, training hundreds of skilled technicians, and setting up many centres where cows, mares, ewes, etc., could be brought and be inseminated. Labour costs were low and everything was carefully organised as a national project.

Australia has neither a deficiency of good sires, nor has it cheap labour. Artificial insemination needs great numbers of females in oestrus within a few hours. In our coastal districts, where the properties are relatively small, cows would have to be selected for miles, in order to get sufficient in the correct stage of oestrus. For it would not warrant the expense to inseminate two or three cows on a property at a time. The large cattle properties of Queensland might possibly use artificial insemination. But even there the selection of suitable cows and the subsequent handling is likely to prove too costly. Again, we have our various cattle societies, and government schemes which allow to the small man the opportunity of making use of the better type of sires. This may be a slow method of improvement, but as will be explained later, it may be the safer.

The great number of ewes on Australian sheep properties represent ideal conditions for artificial insemination (i.e., a great number of females from which to select). But there is a plentiful supply of good rams, so there appears no need for the method in the sheep industry. Even if there was a need, it may do untold harm. Artificial insemination reduces the number of sires, thus increasing the influence of any one in particular. Hence the method tends to increase the dangers of inaccuracy in selection of a sire. Reduction in the number of sires is not as important where the stock population needs to be improved rapidly, nor as in thoroughbreds where such things as speed and stamina are the main criteria.

Artificial insemination has been carried out in Australia as an experimental procedure, but the results, like those in South Africa, have been far from ideal. This may be due to faults in technique. The operation is not easy, and even if every precaution is taken in regard to collection,
storage, dilution and injection of the spermatozoa, the female must be in the correct stage of oestrus for the best results. Insufficient is known at present of oestrus, time concerning ovulation, etc., of domesticated females under Australian conditions. Some valuable work has and is being done in this regard with ewes, but the only definite things known to date are that both oestrus and ovulation show great variations.

Thus, while the method could be used in animal husbandry in Australia, it is doubtful if, under present conditions, it will ever be used to a great extent. Studs, especially horse and cattle studs, may utilise it in the future, but probably not as a routine practice. A valuable sire can usually serve sufficient females on a stud. Moreover, studmasters are often not anxious to spread important blood far and wide. Artificial insemination as a national project, if well-organised, and providing the application of the method is in the hands of skilled technicians and exceptional studmasters, could be used to improve Australian stock. But it is questionable whether these conditions would be fulfilled at present.

WHAT "CENTAUR" MEANS.

Although this is our badge and the traditional emblem of the veterinary profession, few of us know what the figure stands for.

Centaur is really Chiron, who was the wisest and most just of all centaurs in mythology. The latter were a wild race of hunters, living in the wood on Mount Peleon in Thessaly.

The myth of the man-horse probably arose from the national pastime of the Thessalians, which was bull hunting. "Kentauros" (Greek) means bull-killer, and no doubt in time came to be represented by the usual centaur figure, as these people were seldom seen except on horse-back. It is recorded that the American Indians thought the early Spanish cavalrymen were also complete units, such as a centaur is depicted today.

The leader of the mythical centaurs, Chiron, was famous for his knowledge of shooting, medicine and music. He taught the use of herbs and the polite arts to the great men of his age, among whom were Jason, Achilles, Aesculapius, Aeneas, Peleus and Hercules.

The last named, however, was the cause of Chiron’s death. Hercules, in the fourth labour imposed on him by the treacherous Eurystheus, was required to capture alive the Wild Boar of Erymanthus, and in doing so was involved in a battle with the centaurs.

Although Chiron turned to help him against his fellow centaurs, he was wounded in the knee by one of Hercules’ arrows. Being immortal, he was faced with the dismal outlook of enduring the pain from this wound for all time.

Consequently, he besought mortality again from Jupiter, so that he could die, but so great had his services been to men that he was placed in the heavens. Thus Chiron became the constellation we now know as Sagittarius (the hunter).

A traditional centaur carries the Wand of Aesculapius. The latter is the god and inventor of medicine. A son of Apollo from Coronis, whose infidelity was discovered by a crow, Aesculapius was the object of the first Caesarian operation, after Apollo had slain his wife. He ultimately became physician to the Argonauts and figures often in the ancient lore.

His wand has a twined serpent, which is the symbol of prudence and wisdom. However, apart from this, it is known that ground, dried or boiled serpents were the constituents of all the really potent medicines of those days. This briefly is the story behind our badge and the Journal’s title, and one that we should all know something of.

P.L.B.
THE FRIESIAN BREED OF CATTLE.

By J. O. GILL.

The Friesian breed of cattle, known in America as Holstein-Friesian, represents a development of over 2000 years. This breed traces its origin to the Asiatic cattle which the Friesland and Batavian peoples brought with them when they settled near the shores of the North Sea, before the time of Christ. Little outside blood was introduced, while the large cattle of Holland, under the painstaking care and conservative management of the Dutch farmers, made of that country the greatest dairying land in the world. Even in the time of Caesar and Tacitus, the Dutch cattle were noted for their production. The Dutch breeders do not aim at extremely high records of production, but have achieved a progressive improvement in their cattle by the adoption of a very efficient method of selection, whereby only proven males and females are eligible for registration. The Dutch cattle combine both dairy and beef producing qualities and it is upon these characteristics that the breeders in Holland base their claims to the Friesian being an ideal dual purpose animal.

The first recognition of a stud breed of these cattle is contained in Volume 1 Nederlandsh Rundvee-Stambock, which was published in 1875. The colours black and white, red and white, and dun and white were then recognised, but in most countries to-day, black and white alone is accepted as a standard colour for the Friesian breed.

The Friesian breed of cattle has spread and has become established in many parts of the world, including Australia, New Zealand, South Africa, China, Japan, Great Britain and many parts of Europe. It is proposed in this article to give a brief description and history of the development of the breed in America, New Zealand, Australia and the United Kingdom.

The first record of the appearance of the cattle in America dates back to 1621, when some were brought in by Dutch settlers, but the first definite importations to that country were in 1795 when two bulls and six cows were introduced by John Linchlaen, of New York. Although these animals attained some local fame, they were apparently allowed to mingle with the native cattle and the purity of the blood lines was lost. In 1852, Chenery, of Massachusetts, purchased a cow from a Dutch sailing vessel, and in 1857 he made further purchases. In 1859, Chenery imported four more cows, but unfortunately all of them with their descendants were seized and destroyed by the Commonwealth of Massachusetts on account of an outbreak of rinderpest. Nothing daunted Chenery. He again imported a bull and four cows and it was upon these and subsequent importations that the Holstein-Friesian breed in America was founded.

To-day, America must be considered as the country which has fostered and developed the breed to a greater extent than any other country outside Holland. The breeders in the United States have evolved a Friesian which differs very markedly from the Dutch type in that it is finer and flatter in the bone and is essentially a high producing dairy animal. The Americans, as one might expect, are out to break records and consequently they have developed dairy cattle which will withstand the strain of high production over a number of years. The American cow "May Echo Sylvia" is the only one of any breed to produce 1000 lbs. of milk in seven days. "Carnation Ormsby Butter King" now holds the world's record for the Friesian breed with 1402.0 lbs. of butter fat in 365 days. She is a daughter of one of the greatest sires in the United States to-day. "Matador Segis Ormsby." Another example is "Carnation Ormsby Beauty May," which has produced over 4000 lbs. of butter fat in four years. "Carnation Ormsby Butter King" is also the world's champion milk producer for all breeds, with a record of 38,606 lbs. of milk in 365 days. In order to establish these records it has been found necessary not only to produce cows with the correct dairy conformation, but also to employ intensive housing and feeding methods and to milk the test cows four times a day.
In reviewing the importations to New Zealand, pride of place must be given to the late J. C. N. Grigg, of Longbeach, who in 1884, landed one male and six females direct from Holland. Although the value of the various strains which these cattle represented was reduced by subsequent inter-crossing, there is no doubt that one cow "Netherland Queen" laid the foundation of the famous Netherland family in the Dominion. Until the present, Grigg has been the only one to import Friesians directly from Holland, but many early-day breeders took the opportunity of securing cattle of Dutch descent from Australia.

The next importation into New Zealand was made from America by Newton King, of New Plymouth. These cattle had a great deal to do with the laying of Friesian foundations in New Zealand. One of the descendants was "Alcartra Clothilde Pietje," a cow of excellent type which, from the standpoint of production and breeding capacity, must be considered the greatest Friesian New Zealand has produced. Subsequent to her record of 31,312.5 lbs of milk and 1145.24 lbs. of butter fat in 365 days, she had seven calves in four years. King's young stock met with such keen demand that other breeders soon followed his example in importing.

Two notable introductions were made by Gunn and Sinclair and they selected their cattle solely in Canada. In the first consignment was "Burkeyje Sylvia Posch," which later became the world's champion "long distance cow." New Zealand has frequently resorted to America and Canada for fresh blood lines and the result is that the majority of Friesians in the Dominion to-day are of the American type.

Imports of cattle to New Zealand practically ceased with the advent of the Embargo which prevented the entry of animals from certain countries, on account of the danger of introducing diseases such as foot and mouth disease.

It is almost impossible to say when Friesian cattle first came to Australia, but it seems probable that Berry imported some between 1835 and 1840. In 1890, there was a herd of crossbred Friesians running wild in the swamps and timber belt along the south coast of New South Wales. It is reported that the Bodalla Estate was one of the earliest users of Friesian bulls. Hay, of Coolangatta, secured three heifers from Holland in 1898; one died in quarantine and the other two with their progeny eventually went to form the nucleus of Lamond's stud at Nowra. The New South Wales Government was a large importer in the nineties, while David Mitchell was numbered amongst the early-day breeders in Victoria. It was not until after the war, however, that any of the breed were introduced from America.

About 1920, Lloyd Jones and Lamond, of New South Wales, and Flack and Sewell, of Victoria, made importations from New Zealand, and since then Australian breeders have resorted to the Dominion for stock. A notable cow which left New Zealand for Australia was "Woodcrest Johanna Tehee" and she is considered by many to be the nearest approach to true type the Dominion has produced.

In 1926, George Richardson, of Tasmania, purchased a large consignment of heifers from H. North & Sons, of Otago, and one of these cows, "Rosevale Inka Sylvia Flora," later, in 1930, became the Australian Mature Class Leader with a record of 25,790 lbs. of milk and 1064.3 lbs. of butter fat in 365 days. Here average test was 4.12 and she is also the Mature Class Leader for a test of 273 days duration.

The Friesian Cattle Club of Australia was formed in 1914 and the combined Volumes 1 and 2 of the Herd Book were printed in 1920.

A great many of the Friesians to be seen to-day in Australia, and particularly in New South Wales, are of the Dutch type and there is a tendency for the breed to exhibit distinct beef characteristics and to become what is known as "coarse." On the other hand, animals such as "Ingolston King Pontiac," Sydney Royal Champion for 1937 and 1938, would do credit to any country in the world.

Dutch cattle were introduced to Scotland somewhere about 1700. As early as 1780, they are spoken of as helping to form the nucleus from which
the breed originated. In 1840 Sir William St. Quinton and Michael Dobinson, among other of the County of Durham, resorted to Holland for their breeding cattle. A few years ago some Friesians were exported to England from South Africa and they realised fabulous prices. It is not much more than thirty years since British farmers began to take a keen interest in the Friesian, but to-day, the breed is well established throughout the British Isles. The history of the English breeds known as Holderness, Teeswater, Shorthorns and Herefords and of the Scottish breeds known as Ayrshire and Black Falklands, seems to indicate that they are all indebted to the Friesian as a strong factor in their formation.

The statement that the Friesian breed is only suitable for heavy, flat country is often made, but it is very significant that many record holders the world over have been milked on the lighter types of soil during their tests. Friesians, in competition against all breeds, were proved to be the most economical producers at the Buffalo Exposition test, at the St. Louis Exposition test, at the Wisconsin Experimental Station and also at the Nebraska Experimental Station.

A notable characteristic of the breed is its adaptability to varying climatic conditions. Wherever these cattle have been introduced, whether it be to the cold rigorous climate of Northern Russia, or to the hot arid climate of South Africa, they have adapted themselves admirably to their environment. The United States and Canada are finding a ready market for their young stock in such places as Bolivia, Peru and the Argentine, while Australia and New Zealand have been active exporters to China, Japan and many of the Pacific Islands. One may, therefore, assume that the Friesian breed, which in the past has gained such world wide popularity amongst practical farmers, must in the future play an even more prominent role.

[Ed. It is to be hoped that admirers of other breeds will also write similar histories, to this one of John Gill’s, for Centaur].

THE AGE OF A HORSE.

To tell the age of any horse,
Inspect the lower jaw, of course;
The six front teeth the tale will tell,
And every doubt and fear dispel.

Two middle “nippers” you behold
Before the foal is two weeks old,
Before eight weeks two more will come;
Eight months the “corners” cut the gum.

The outside grooves will disappear
From middle two in just one year,
In two years from the second pair;
In three, the corners, too, are bare.

At two, the middle “nippers” drop,
At three the second pair can’t stop;
When four years old the third pair goes,
At five a full new set he shows.

The deep black spots will pass from view
At six years from the middle two,
The second pair at seven years;
At eight the spot each “corner” clears.

From middle “nippers” upper jaw,
At nine the black spots will withdraw,
The second pair at ten are white;
Eleven finds the “corners” light.

As time goes on the horsemen know,
The oval teeth three-sided grow;
They longer get, project before,
Till twenty, when we know no more.
(1) Importance of Hormones:

It is only in recent years that any worthwhile knowledge of the mechanism of milk secretion has been gained, and even today, this is of the barest kind. Nevertheless, some of the facts already learned are interesting, and decidedly valuable from a practical point of view. To show that research in this field is not of mere academic interest, the following possibilities for the application of experimental results are mentioned.

Probably one of the greatest losses the dairyfarmer experiences every year are those connected with mysterious or unpreventable failures in production. Where these lowered capacities to yield milk can be explained, such as in the sterile cow whose ovaries or uterus refuse to function again, a correct knowledge of the stimuli to full milk-production introduces the possibility of maintaining these cows at a profitable level for many months longer. It is known that speying, by removing the inhibitory effects on continued secretion of estrin and corporin, helps to reduce this loss in production, but the use of prolactin and possibly thyroixin, provided they can be manufactured cheaply enough, may open up entirely new fields.

Medication by these and other hormones may also help to improve the backward heifer's udder and increase her capacity to produce. A possible role is that of restoring to full flush, the cow which "comes in badly" or is yielding at an obviously low level.

Another great possibility is really a dream, but one hopes it is true. For some time now, it has been known that the dairy cow's pituitary has about twice the content of prolaction to that of the beef cow, and also that it secretes much more thyreotropic hormone.

These facts probably represent the essential difference between the two types. That the good dairy cow is hyperthyroid fits in well with our conception of her as a thin-skinned, lightly-fleshed and fine-boned animal, whose large bright eyes denote alertness.

But her ability to produce prolactin probably determines a great part of her worth as a dairy cow. It is now suggested by overseas workers, that if heifers are given injections of prolactin, by their positive or negative response to it in extra secretion, some method of selecting the true dairy animal (or really the prolaction high-producer) can be evolved.

This theory is also applied to bulls. If a male excretes prolactin at a certain level, determined by biological assay, he is assumed to have some genes for this faculty, and so the mating of animals with known physiological factors for high-production can be arranged. However, most of this is something yet to be demonstrated.

The Induction of Secretion.

We have been taught some years now, that estrin and corporin acting synergistically are responsible for the development of the cow's udder to the actual point of its being ready to secrete milk. This, however, is only partly true, because in a pituitary-less animal, these endocrines have no such effect. All that they appear to do is induce the pituitary to secrete still more of its box-of-trick hormones, which actually carry out this building-up work. If the pituitary extract from an animal, which has been given estrin and corporin continually, is injected into a pituitary-less female, her udder is built-up to the secreting point at once, although she is receiving no other hormone treatment likely to affect the udder at the same time.

At the stage when pregnancy is approaching full-term in the cow, the effect of estrin and corporin, acting through the pituitary on the udder has actually been to mature its secreting cells, so that they are ready to operate to the maximum. If parturition is early or delayed, the correct physiological moment for the induction of milk secretion is missed, and the cow never secretes as well during that lactation. This is a well-known fact, corroborated by the observations of dairy farmers.
In addition, estrin appears to have an action on the pituitary, which becomes greater as the pregnancy progresses (when more prolact containing estrin-like substance is being secreted). This action is to stimulate the lactogenic hormone cells of the pituitary, as though to prepare them for their first sudden burst of energy, just as the calf is born. But estrin does not actually start secretion of prolactin.

Corporin, on the other hand, seems to have some inhibitory control of prolactin secretion, just as it renders powerless the action of oxytocin in the blood. When the corpus luteum regresses, this retarding influence disappears, and so oxytocin and prolactin are free to perform their allotted functions.

The mechanical emptying of the uterus when the foetus is expelled, has evidently a nervous influence on the sympathetic system, aiding the first excretion of prolactin from the pituitary. These two factors, nervous and hormonal, appear to be responsible for the first discharge of prolactin, which is induced very rapidly for an endocrine secretion, being a matter of hours only.

The Role of Prolactin.

Prolactin acts directly on the secreting cells of the udder, stimulating them to carry out the well-known processes of milk production. Injected into a low-yielding cow, prolactin will improve the milk supply at once, until its effect passes off. In other words, its action is quantitative and points to a continuous production by the pituitary.

How this is organized is as yet unknown. One school of thought claims that suckling or the milking act provides a constant sympathetic stimulus to the pituitary, which responds by prolactin production. This is an attractive theory, supported by the fact that milk secretion soon abates if the teats are amputated and the cow milked by a syphon.

This, however, is a loaded piece of evidence, because the phenomenon of "letting down" is disregarded. Briefly, this is a contraction of the longitudinal plain muscle fibres occurring around the milk ducts, which follows stimulation of the teats by the milker or calf. This mechanism raises the milk pressure inside the udder by 20 mm. to 30 mm. of mercury in one half to two minutes. Milk, which would not leave the tiny alveoli because of surface tension and viscous forces, is literally forced out by this contraction.

If the teats are amputated, this stimulus is lost and some milk is naturally left in the vessel. There appears to be no more retarding influence on milk secretion than the imperfect withdrawal of milk from the udder. Prolactin also cannot improve the yield of a cow that has been partially dried off and neither can further stimulation of the teats. This evidence would point against the sympathetic-pituitary stimulation theory of prolactin secretion, and indicate that the hormone merely confers on the secreting cells the ability to manufacture milk from the precursors in the blood, and that the cells themselves are maintained in functional perfection so long as they are kept working at full pressure. This means during the period when milk is being withdrawn completely and regularly. In other words, full, regular and continued removal of milk itself from the udder is possibly the stimulus to constant secretion, and the rate of prolactin production is probably controlled by undetermined mechanisms, some undoubtedly due to heredity and some psychical.

The usual drying-off story would support this view, as here the pressure of retained milk acting on the secreting cells, by checking secretion and reducing the local blood flow, has the power of causing their degeneration so powerfully, that the alveoli become denuded and almost disappear. The dry cow has no secreting tissue worthy of the name. This is built up again before next calving by the pituitary in the manner already referred to.

Influence of Other Hormones.

It seems that an unknown pituitary hormone activates the secreting cells of the udder so far as their development is concerned. Where prolactin enters the series of events, is probably as an enzyme, perhaps multiple in nature. There are many unexplained phenomena occurring in the secret-
ing cells during milk-production, and this is the only sphere of activity pro-
 lactin is known to possess. For instance, the production of lactose from
 glucose is not possible as yet in vitro. There is also the building up of
 caseinogen and lactalbumen from amino acids in the blood, while the ap-
 pearance of fats in milk has never been completely explained. Prolactin is
 intimately concerned in these processes on a quantitative basis.

Prolactin, however, does not monopolize the whole mechanism, because
 milk secretion is impossible in a pituitary-less animal if carbohydrate and
 adrenal cortex are not simultaneously administered. The pituitary hormone
 controlling carbohydrate metabolism is absolutely essential to milk produc-
 tion, probably having the dual role of aiding in the activity of the secreting-
cells themselves and in the delivery of glucose to the udder. Following
 removal of the pituitary, a severe hypo-glycaemic results, and this is thought
 to account for the hormone's indispensibility.

The Adrenal Cortex.

The action of cortical hormone of the adrenal body is also not quite
 clear. Adrenalectomy in the milking animal is followed by a rapid cessa-
tion of secretion, that is not explained by the usual effects of withdrawal of
 this hormone on the body. The latter are chiefly a progressive polyurea and
 a de-salting of the tissues, with heavy excretion of sodium chloride. These
 occurrences do check milk secretion by inhibiting the flow of precursors
 from the blood into the secreting cells, but the change comes on slowly.

It is probable that the adrenal cortex hormone aids in the rate of milk-
 secretion in a synergistic manner with prolactin. The lactating female pro-
duces more cortical hormone than the dry animal, far more than is needed
 for normal body purposes. What the precise action of this is, as yet
 remains to be discovered, but we do know that prolactin and cortical hor-
 mone and pituitary carbohydrate hormone are necessary for the initiation
 and continued secretion of milk.

The role of thyroxin is very interesting. By raising a cow's metabolic
 rate 10% with thyroxin, one worker was able to increase milk production
 by 11.2%. Other workers have increased production by as much as 30%,
 with thyroid extract. These facts point to two possibilities. Either thyroxin
 improves the output of prolactin from the pituitary, or what is more likely,
 it increases the rate of metabolism of the milk secreting cells, which then
 handle easily the larger quantities of blood forced through the udder, also
 under the influence of thyroxin. Whichever is true, there is no question
 but that the hyperthyroid female has definitely an advantage as a producer.

A brief summary of the foregoing is as follows—
(a) Ability to produce prolactin secretion is probably a genetical
 character. The hormone acts directly on the secreting cells of the udder,
 and with cortical hormone determines the rate of milk secretion.
 (b) The Carbohydrate-tropic hormone of the pituitary is needed by
 the secreting cells for milk production.
 (c) The Preparation of the secreting cells before milk formation is
 due to a new pituitary hormone.
 (d) Full withdrawal of milk from the udder is a stimulus to continued
 production at maximum levels.
 (e) The nature of a cow's thyroid glands determines her usefulness
 as a producer.

(2) Mechanics in Milk Secretion:

Some of the physical processes of secretion are also of interest to
 veterinarians, although this is not very recent knowledge. For instance,
 most dairy farmers believe that at least half the yield of milk is actually
 made by the cow whilst she is being milked. This he thinks explains the
 phenomenon of "letting-down," but also believes that no udder can actually
 hold the large quantity of milk withdrawn from it at one time.

This later theory is untenable, because on post-mortem, a lactating cow's
 vessel can be made to yield as much milk at one time as during life, while
 the method of mincing the whole udder and finding the lactose content,
 shows that when she enters the barn to be milked her vessel contained up to
 120% of the milk, to be given with the next few minutes.
A glance at the circulatory system also shows that the old farmer's idea is impossible. A cow weighing 1000 lbs. possesses about 8% of her bodyweight in the form of blood. This is some 81 lbs. of blood, of which roughly 40 lbs. is serum. From the latter alone, milk can be manufactured by the secreting cells.

The serum's percentage of glucose is usually about 0.25% or in the region of one tenth of a pound in weight. Now this same cow should yield at least 12 lbs. of milk at each milking containing 4.3% of lactose, which equals half a pound of sugar. Simple review of the situation will show that it is an utter impossibility to withdraw more sugar than is contained in the blood at one time, during the course of 6 to 8 minutes during milking. A similar argument applies to the withdrawal of protein and fats from the blood. Proteins actually could not be commandeered in such a short period without death to the cow.

Somewhere about 3.7% of a 1000 lb. cow's blood passes through the lactating udder in one circuit of 52 seconds. This means that 200 lbs. of blood enter and 199 lbs. leave the vessel on an average each hour, if 24 lbs. of milk are produced in a day. In other words, 0.5% of the blood going through the udder is turned into milk.

The rate of secretion, however, is not constant. For the first 3 to 4 hours after milking it proceeds rapidly, but from that time onwards, the rate slows down increasingly. This is due to the effect of the pressure of milk already in the vessel's duct system on the secreting cells. As the pressure rises, these cells are unable to force the manufactured milk out into the lumina of the alveoli and ducts freely. Eventually a stage is reached at about 10 to 12 hours of secretion in a flush cow and 12 to 16 hours in the average cow, when milk formation is almost completely stopped.

This inhibition is due to pressure distortion of the epithelial cells and compression of blood vessels around the alveoli, so that little fluid interchange is possible. Milk becomes altered in composition from this stage onwards. Osmotic forces alone operate, and with the secreting cells out of action, a balance of chlorides must take place on each side of the alveolar membrane. Salt consequently seeps through into the milk.

During the later stages of this slowing-up phenomenon, milk is secreted at a differential rate according to its constituents. Lactose and proteins find it relatively easy to pass through the cell membranes, but fat globules are retained increasingly from the 4th hour onward.

As the milk is evacuated by the milker, these fat globules held inside the secreting cells, and adhering to the alveolar walls, are released in a shower, when the reduction in pressure inside the udder makes this possible. For this reason, more than the usually accepted one where gravity is said to cause the globules to move upwards in the udder, the strippings are extremely rich in butter fat.

Tests show that 4 hour intervals between milkings, actually produce a higher percentage of fat in milk than 6 hour intervals, and these again are superior to 8 hour intervals, largely because of this fat retention by the secreting cells. The increase in butter fat to be gained by these methods is claimed to pay for the extra cost of three times a day milking, in a cow giving 4% butter fat and yielding 40 lbs. a day.

The pressure of milk in the udder at which further secretion is almost prevented 30 to 40 mm. of mercury or about 4/7th to 3/4 of an atmosphere. This is lower than many would imagine, but is roughly the pressure in the udder of a fairly fresh cow as she comes into the bail for the morning milking.

The pressure, although sufficient to inhibit secretion is not great enough to drive the bulk of the milk out of the udder. An increase of another 20 mm. of mercury is needed and to effect this stimulation of the plain muscle of the udder which shortens the ducts and compresses the alveoli must be carried out.

The stimulus is usually provided by the milker's hands in massaging the cow's teats, but this is not all. A definite and regular series of events
must take place every time the cow enters the barn before she will "let down" her milk. The process is only possible after compliance with a psychic requirement of the animal's, such as the presence of food in the barn, washing the teats, rattling of buckets, absence of strange sights and noises, and so on.

The stimulation of the plain muscle also is very shortlived. It lasts a mere 6 to 8 minutes after good initiation, which often takes up to 2 minutes to induce. The importance of this concerns the milker who must fulfil two requirements.

He should be capable of bringing about a maximum stimulation of the udder muscle quickly, and then be efficient enough to withdraw the milk rapidly and cleanly, avoiding disturbance to the cow, within the period of stimulation. Once the latter wears off, it is difficult to reproduce inside the next 3 hours.

Good, clean, fast milking is essential. Research has shown that it will make a difference of 10% extra in total milk yield and 40% more in fat output, compared with slovenly methods.

These notes on secretion are purely an attempt to place some of the lesser known facts of this very important process on paper, in the hope that they may be of some practical use. The physiology of the cow's milking apparatus is a commercialized entity, and very important from a national viewpoint. The pity is that we know so little about it.

HORSE BREEDING IN THE SEVENTEENTH CENTURY.

If you be desirous to have your Mare to conceive a Horse-colt, rather than a Filly, observe then this lesson, and you shall find it an infallible rule which will never miss, viz.: At what time you would have your Mare to be covered, let it be done when one of the first five masculine signs do reign, which are either Aries, Taurus, Gemini, Cancer or Leo; but if she shall be covered when any of the Feminine or Watry signs are predominant, as Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius, or Pisces; then be you confident it will be a Fill, for this have I often tryed, and found it seldom or never to fail me, specially if the wind be either west or north (but west is best) at the time of her covering.

And you will find this, my rule, to be most infallible, for experience hath taught me: And I have attained unto more knowledge by experience than I was ever able to aspire unto, either by reading or study or by hearing what others have dictated or told me. For we have a maxim, "Experience is the best and ablest mistress and moderatrix."

From the "COMPLEAT HORSE-MAN AND FERRIER."

DARMOSS.

AN ELIOT PARAPHRASE.

We are the dumb men; we are the nit-wits
We sit in a trance
our buttocks corrugating on lecture benches.
Before us the high priest,
in the white robes of office,
performs strange rites with mysterious incantations;
kow-tows to the Gods of Asepsis and Immunity,
weird is his chant as he contemplates the burner,
the sacred yellow flame of the temple of the deity.

We are the dumb men.
We are the nit-wits.

(With apologies)

G.D.R.
SHOW POINTS OF THE SCOTTISH TERRIER.

L. P. McManamny.

In general appearances the Scottish Terrier is a thick set dog having short legs, alert and giving one the impression of great power and agility in a small compass.

HEAD. The head should be well proportioned, yet long. The length of the skull enabling it to be wide yet still retaining the characteristic narrow appearance.

Ears. Small, neat, pointed, of fine texture and carried erect.

Eyes. Small, almond shaped, deep set, dark and wide apart. A common axiom among judges being, "No eye, no head."

Skull. Nearly flat and the cheekbones should not be prominent, whilst the stop must be very well defined.

Nose. Large and the line from nose to chin should give the impression of sloping backwards.

Teeth. Large, with the upper incisors just overlapping the lower ones.

Neck. Muscular, of moderate length, well-carried and set into a long sloping shoulder with a well-carried, forward brisket.

Forelegs. Well boned, straight, neither out at the shoulder nor carried under the body and having straight pasterns.

Feet. Good size, well padded, with well arched, yet closely mitted toes.

BODY. Chest. Broad, deep and well-carried between the forelegs.

Ribs. Well-sounded and carried well back at the same time being flattened to a deep chest. The loins should be well-muscled and deep, having a powerful coupling to hindquarters.

Hindquarters. Large and powerful for the size of the dog. The buttocks at the same time should be big and wide.

Thighs. Deep and muscled with wide flat muscles and should be well carried at the stifle.

Hocks. Strong, well bent and straight.

Tail. Moderate length, in proportion to the size of the animal, thick at the base and tapering to the tip and may be carried either erect or slightly bent.

Colour. Black, any brindle or wheaten, a small amount of white on the chest is allowable, but elsewhere is objectionable.

Coat. Composed of a short dense soft undercoat and a hard dense wiry outer coat. It should not show any wave or curl.

Though the Scot is stout-legged, he should give the appearance of being active, agile, full of life and the movement should be a "free," easy and smooth one.

The animal should be characteristic of the breed in that he gives the appearance of gameness, alertness, mischievousness. He is a typical die-hard.

The weight of the animal may vary from 17-21 lbs., yet those limits are seldom found in our champion dogs to-day. If the dog is desired to be powerful for its size with plenty of big bone, it is hard to imagine how the weight of the animal can be kept within these limits.

CLINICAL CASE REPORTS.

1. Inguinal Hernia in a Pregnant Bitch.


The history on admission was that the patient, a cream Pomeranian bitch, aged 6 years, had for the preceding six months, a large swelling in the inguinal region, which had increased rapidly during the last four weeks. She had recently been served.

On examination a large swelling, about the size of a fist, was seen in the right inguinal region. It was tense, not freely movable, and caused little inconvenience to the animal, which was in good general health and condition.
The diagnosis of an inguinal hernia containing a pregnant horn of the uterus was made and the animal admitted for operation.

The patient was starved for 24 hours after prior purgation. The right inguinal region was clipped, shaved and disinfected with Liq. Iod. mit. Anaesthesia was induced and maintained by ether, using Hobday’s No. 2 apparatus and mask throughout.

An oval area of skin was removed directly over the swelling and the hernial sac revealed by blunt dissection. The sac, when opened, was found to contain the right pregnant horn of the uterus, which was removed by amputating behind the right ovary and close to the body of the uterus.

The neck of the hernial sac was freed from the inguinal ring, ligated, the sac removed, and the stump returned to the peritoneal cavity. Two continuous chromic catgut sutures were inserted into the ring, the external pudendal vein being carefully avoided. The cavity was packed with iodoform gauze, a dry dressing placed over the wound and the abdomen bandaged.

The packing was removed on the following day and the cavity gently irrigated with warm Eusol.

This treatment was continued for eight days when the wound was left unbanded and hot water irrigations substituted for the Eusol. No temperature rise occurred after operation and the animal’s health remained good throughout. Slow granulation of the depths of the wound occurred and liq. iod. mit. was applied once daily for a week prior to discharge from hospital at the beginning of the third week.

Discussion. The case is recorded as being a typical inguinal hernia, met with so frequently in small pet dogs. Most cases of this nature at the Clinic are in Pomeranian bitches from 3-6 years old. Their hereditary nature is suggested by the fact that such cases appear regularly in certain strains of Pomeranian breeding stock.

2. Primary Carcinoma of the Liver of a Dog.

By J. G. Hoeben, B.V.Sc, Senior House Surgeon.

The patient, a black Pomeranian dog, aged 5 years was first seen at the Veterinary Clinic on 24/8/38.

The owner reported that for the last three weeks the dog had rapidly lost condition, vomited occasionally and experienced severe abdominal pain. Defaecation, urination and appetite were unimpaired. The animal was in severe pain and groaned incessantly. Respiration was laboured and thoracic in type. The abdomen was tense and hard and the patient showed extreme pain on palpation of the left and central epigastric region. The temperature was 104.8. The mucous membranes were very slightly icteric.

Administration of morphine (grs i) followed by ether brought about relaxation of the abdomen, when palpation revealed an irregular mass just in front of the xiphoid process of the sternum.

Treatment:

After admission to hospital, apomorphine grs. 1/10th was given but examination of the vomitus revealed nothing significant. Suspecting peritonitis following perforation by a foreign body, the abdomen was X-rayed. Dorso-ventral skiagraphs showed irregular shadows in the gastric region with an opaque mass in the mediastinum.

Since the condition remained unchanged next morning, and temperature was still high 103°.8, an exploratory laparotomy was decided upon.

Operation:

The animal was anaesthetised with ether, using Hobday No. 3 followed by No. 2, with mask throughout. An incision was made about 2ins. long, just behind the xiphoid process of the sternum and to the left of the linea alba.

On entering the peritoneal cavity, a large quantity of blood stained fluid was seen. The liver was enormously enlarged and covered with soft nodular swellings about 1.25 cm. sq. in area, and showed evidence of recent haemorrhages.
and spleen. The stomach was normal. A diagnosis of the neoplastic condition of the liver with metastases was made and the animal destroyed.

Post Mortem Examination:
The above condition was found and in addition multiple lesions in both lungs.

The mediastinal lymph gland, which proved to be the opaque mass seen by skiagraph was enlarged and caseous. The heart and other viscera showed no macroscopic lesions.

Pathological Examination:
Sections from liver, lungs and lymph glands showed the condition to be due to a primary very anaplastic carcinoma simplex of the liver with metastases in the lungs.

Discussion:
The case is regarded as being one which showed several clinical symptoms typical of manifestations of cancer of the abdominal viscera. These included the extreme abdominal pain, the surgical abdomen, the pyrexia, the sudden onset and the slight changes in the visible, mucous membranes in spite of widespread liver damage.

Ovaro-hysterectomy in a Bitch.

By J. W. Newcomb, B.V.Sc., Junior House Surgeon.

The patient, a 4 year old Alsatian bitch, about 70 lbs. body weight was admitted to hospital for ovarectomy.

The bitch was kept under observation for 3 days. A pronounced mammary development and a sanguinious discharge from the vulva were noted. The temperature ranged between 101°F. and 104°F. during this period.

As a metritis was thought possible, preparations were made for carrying out an ovaro-hysterectomy.

The patient was starved for 24 hours after prior purgation. The ventral abdominal wall was clipped, shaved and disinfected with liq. iodi. mitis. Anaesthesia was induced and maintained by A.C.E. mixture, using Hobday's No. 2 apparatus and mask.

Owing to the mammary development, the incision was made directly in the mid line, half-way between the last rib and the coxal tuber, backward for about 3.5 to 4 inches. The skin, subcutaneous tissue, muscle and peritoneum were incised. The uterus was found to be generally enlarged and was readily damaged by manipulation on the application of forceps. There was a firm swelling in each horn.

The uterine and ovarin arteries were ligated on both sides and the ovaries and uterus removed. In amputating the body of the uterus, 2 ligatures were applied $\frac{3}{4}$ of an inch apart and amputation carried out between them. The stump of the uterus to which the distal ligature had been applied was carefully swabbed with carbolic acid and then excess of the latter removed. The stump was turned in by a row of Czerny and then a row of Lembert sutures. The laparotomy wound was closed by a row of continuous gut sutures through peritoneum and muscle; the skin with interrupted silk sutures. A Eusol dressing was placed over the wound and held in position by bandaging.

The bandages and dressing were removed the next day and acriflavine gently irrigated into the wound. For several days, the dog had difficulty in retaining food and water. This was overcome by administrating chloretone and feeding small quantities of milk at frequent intervals.

Thenceforth, daily irrigations with warm Eusol were carried out. These was no rise in temperature at any time subsequent to operation. Healing was uneventful, the patient being discharged from hospital 20 days later.

Pathological examination: The specimen submitted showed an early adenocarcinoma of the uterus probably commencing in the mucous glands of the organ and extending into the muscular coat, thus accounting for the fragility of the uterus at operation.

Discussion: The case is recorded to show the difficulty in differentiating clinically sub-acute metritis in the bitch from other conditions involving this organ.
ANGIO-SARCOMA IN AN ALSATIAN DOG.

(B. H. E. Barraclough)

The subject was a Sable Alsatian Dog, aged 8 years.

On 3rd May, 1938, the dog was brought to the Sydney University Veterinary Clinic in a poor condition and found to have a hard tumour over the region of the third lumbar vertebra and to the right of the mid-line. According to the owner, it had been increasing in size slowly, for the past 12 months. The dog was admitted to hospital and an attempt was made to excise the tumour. It was found to consist of apparently clotted blood, which because of its diffuse nature could not all be completely extirpated. The dog was discharged from hospital 4 weeks later, when the wound had almost healed.

Three and a half months after the first examination the dog was again brought to the clinic with a hard diffuse tumour, about the size of a fist, and in a similar position.

Examination on this occasion showed the growth to be roughly 3 ins. by 4 ins., painless and firmly attached to the underlying muscles. The dog was in a cachectic condition. It was re-admitted to hospital for operation.

Local anaesthesia was induced by infiltration with 4 mls. of 2% cocaine hydrochloride solution. An oval area of skin including the scar of the previous operation was excised and the tumour exposed by blunt dissection. It was found to be firmly attached to the fascia of the longissimus dorsi muscle and an effort was made to excise it completely. On cross section it was seen to consist of haemorrhagic tissue, containing numerous blood spaces. As haemorrhage was profuse, the wound was packed with Iodoform gauze and sutured.

Pathological examination revealed the tumour to be an angiosarcoma. The wound was treated with hot antiseptic irrigations and dressed with Tinct. Iodi. Mit. Four days after operation, considerable oedema of the chest and lower parts of the abdomen was noted, due to pressure of the bandages. Two weeks later, there was a suspicion of recurrence of the tumour at the inferior part of the wound, which was open.

Treatment was continued and several applications of Tinct. Iodi. Fort were given to stimulate the wound, which was indolent and had made little progress. The dog was becoming more emaciated. The faeces had a fetid odour and the urine was very dark in colour. An arsenic tonic was administered. Ascites became clinically evident at this period and the dog's temperature fluctuated between 103° and 105° F. As had been anticipated, metastasis of the tumour into abdominal viscera had apparently occurred.

As the case was considered hopeless, permission was obtained to destroy the animal. This was carried out four and a half months after the first examination, by giving 5 mls. of chloroform intravenously.

The post mortem picture was a striking one, showing a large number of metastatic new growths. There was a large tumour (about 2ins. in diameter) attached to the mesentery and another occupied about a third of the liver substance; the spleen showed numerous raised bluish nodules about 4in. in diameter; the lungs contained many similar nodules though considerably smaller; the carcass was very emaciated.

This case is reported because of the interesting train of events, commencing with the first appearance of the tumour, 16 months ago, up to the destruction of the animal in an extremely emaciated condition. Although metastasis must have occurred early, it was only during the 4 or 5 days preceding its destruction, that the dog showed any loss of vigour or depressed appetite.

The writers of these four case reports are indebted to Dr. R. M. C. Gunn, for permission to publish them.
THE FOAL’S BREAD.

R. G. TURNER.

Horsmanship is an old art to which many superstitions are still attached. Apart from the equine lore of the ancients, we are direct heirs to an art that has been developing in England and Ireland for a number of centuries; and there still exists, even in Australia many of the beliefs held by our fathers of old. One interesting one with which I recently came in contact is that concerning the Foal’s Bread.

Since learning of the Bread, and also coming to possess one, I have found only a few horsemen with long experience with horses, who have knowledge of this object. I also doubt whether one in a thousand students of anatomy would be able to indentify a fresh “Bread.”

The Foal’s Bread is, according to old hands, found in the foal’s mouth at parturition. My specimen is a pale kidney colour, doughy consistency and measuring twelve centimetres in length. It is six centimetres broad and a centimetre in thickness and rather resembles a solid organ.

It is used by the foal “to feed on while in the bag.” Some claim that as soon as parturition is complete, the dam immediately makes a point of devouring the Bread. Others say that a thoroughbred must perform this to ensure the transmission of speed to the foal by the milk, while conservative schools deny this latter belief.

Should the Bread drop to the ground or otherwise be missed by the mare, it is likely to be retrieved by grooms or others and it acquires a market value ranging, I am told, from five to fifty pounds, which rather depends on the presence of a buyer and also of his particular needs.

Among the abilities ascribed to the Foal’s Bread, that most widely held is its power over wild horses. It is firmly believed that should a wild horse smell the Bread, the horse will be instantly reduced to docility. One old Irishman informed me that it is a most acceptable thing, when outback in Queensland. A most acceptable thing for any Veterinary Surgeon!

The bread may be used fresh, or dried and powdered, a pinch being given at a time. Some tack the dried bread, which resembles a small strip of leather to the stable door. In England, it is also held to be efficacious as a love philtre or charm.

While much of this is amusing, I do feel that any Veterinarian in horse practice is well advised to become acquainted with the facts. His clients will measure him by their own knowledge.

The Bread is usually a hippomane or mass of desquamated material, found on the allantoic sac wall as a pedunculated body. Anatomists are indefinite concerning its function. It is not found in the mouth, commonly, although it might easily happen to be plastered over the lips of the foetus. The mare probably eats the Bread as it is connected to the foetal membranes which are consumed at birth.

One is, of course, inclined to scout the idea of its horse-taming powers, although I have found no proof of the absence of any substance in the foetal membranes having the opposite effects. As regards the Bread’s potency as a love charm, one can only say that if such things are necessary there must be something very wrong with the human race.

NOTES ON KEEPING A SULPHUR CRESTED COCKATOO IN CAPTIVITY.

W. Granger.

The bird in question was taken from a nest in the Quirindi district in 1935. It was then a few days old. At about twelve months, it came into the present owner’s possession. A more determinate name than Cocky has never been given and the use of the masculine pronoun is somewhat arbitrary.

In regard to health, nothing abnormal has been noticed beyond a fleeting tendency to pick and chew feathers. This seems to be effectively
treated by giving a daily dose of two or three drops of a liver oil preparation which is readily taken soaked in bread.

The main constituents of his rations are sunflower and hemp seeds. During eleven days in May-June of this year, when nothing else was given, he ate eight ounces of each, fed throughout in equal proportions by weight. From time to time, he shows a preference for one or other of these and, unless humoured, a considerable amount of the less favoured seed is deliberately spilt. It is not satisfactory to feed the various bird-seed mixtures, since maize flies out of his beak when cracked and rape is rather small.

Favourite tit-bits are peanuts, milk thistle (the young heads), pigeon grass and buttered bread. It is rather hard to distinguish these from playthings in some cases. Definite playthings are clothes pegs, whilst roots, grasses, biscuits and even chop bones, probably fall into both classes.

By filling the feed tin in the evening with more than he can eat before dark, he is fed, virtually, twice a day. This arrangement keeps him quiet in the early morning. Water is changed daily.

There are three methods of restraint.
Because one wing was repeatedly clipped till about the end of his second year, he did not learn to fly; now he shows no inclination. Whilst under watch, he may be allowed to wander about without further restraint, but it should be remembered he could not, if he wished, escape from a dog and the amount of damage he can do to flowers and trees in a short time is surprising. In a cage or chained in a high place he is, to some extent, protected as well as restrained.

So far as preserving the plumage is concerned, a chain and stand is the best way to keep these birds. A cage has advantages when the bird is brought into a house and it also limits his destructive range. The practice of always feeding in the cage and never returning him to an empty feed tin makes management easier.

The bird under discussion, seems to prefer his cage to the chain and stand, but best of all likes to perch on a clothes prop, with the opportunities for exercise on the clothes line.

The time spent outside and the number of objects provided for his attention while in the cage have a definite influence on his temper. On the whole, it is equable, and the raucous shrieks he sometimes emits are usually due to excess of spirits or boredom and soon cease if he is given some plaything. He has nipped strangers' fingers once or twice, but this was due to nervousness rather than vice and generally happened when the finger was hastily withdrawn after a half-hearted attempt to pet him.

A NEW ANGLE ON THE CAUSE OF BOG SPAVIN.

We have two sorts of Spavins. The one we call Through Wet, Blood or Bog Spavin, the other, a dry or Bone Spavin. The first of these two is easily cured. Blood (or Bog) spavin is a disease which groweth on the hough with a swelling full of blood which, though it be greatest on the inside, yet the swelling appeareth also upon the outside, being fed and nourished by the great vein, which runneth along the inside of the thigh, and so cometh along the inside of the hough, and so down the leg to the pastern and so from the pastern to the bottom of the foot.

This malady cometh by means that blood is corrupted through hard riding, especially when the horse is very young. Now the blood being through overmuch heating too much stirred, it begetteth a flexible humour, which being marvellous thin, falleth to running downwards towards its centre, but it is stopped in its passage at the hough, where it resideth and swelleth and so becometh a Disease, which pestring that place makes the joint stiff, whereby he becometh stark lame, not being able to go, but with great difficulty and pain.

From an OLD HORSE BOOK.
THE SOCIETY.

The following is a brief account of the Society's activities this year. We have aimed for more than the usual, especially on the social side, and consequently the year has been a good one.

The Annual Ball was held in the Blaxland Galleries, on June 20th, and was highly successful from a social point of view. All present had a very enjoyable evening, but the attendance on the part of members was not up to standard, so that a financial loss was inevitable.

Festival Week: As usual, the Faculty entered a very creditable float in the procession — artistic, but not striking enough to catch the Judge's eye. Other floats were entered by the Women Students and individual years, but here also, the Faculty failed to gain any of the prizes.

To date, the Society has held 14 Ordinary General Meetings, two of which were unique. One, called to discuss "The Society, its Functions and Aims," was arranged with a view to arousing interest in the Society, and to help the Executive Committee to organize suitable functions to further the Faculty spirit. This meeting was very successful and as a result, it was decided to hold at least one evening meeting each term, also to hold Cocktail Parties and Smoke Concerts.

The first evening meeting of the Society was held on Friday, September 16th. This was preceded by an informal dinner at the Union, which was attended by Professor Stewart and about 40 members of the Society. About 75 members filled the large theatre where the address of the evening was given by L. F. McManamany on "The Care, Management and Breeding of Dogs." This was followed by a long discussion in which many members of the Society joined.

Addresses given to the Society during 1938 were as follows:
Dr. HOPKIRK — "Mastitis and its Control."
Professor ROSEDALE — "Scientific Development in Malaya."
Mr. W. SCHUMAKER supervised the presentation of the Bayer Talking Films on "Blood" and "The Microscope and its Wonders."
Mr. W. R. RICHARDSON — "Farm Buildings in Other Countries."
Mr. J. F. GREGORY — "Water Purification and Sewage Disposal."
Mr. J. F. MADDEN — "Fencing."
N.C.O.s of the 2M.V.S. and 2C.M.V.S. — "A Symposium on Horsemanship."

Mr. A. S. LE SOEBUF — "Origin of Breeds of Dogs."
Dr. D. McQUIGGAN — "Sex Hormones of the Domestic Animals."
Mr. D. A. GILL — "Value of Laboratory Training to the Veterinarians."
Miss L. BYRNE — "Experiences in Russia."
L. F. McMANAMNY — "The Care, Management and Breeding of Dogs."
M. ANDERSON — "The Origin of the Australian Merino."
Miss K. RAYMOND — "Essentials in Running a Small Animal Practice."
M. V. ARMSTRONG — "Carcase Qualities in Bacon Pigs."

The first Cocktail Party was held at the Union at the end of Trinity Term, when the Society entertained the staff and a presentation was made to Mr. R. Webb, in view of his approaching marriage. The Party was well attended by the staff and the members of the Society and it was generally agreed that it would certainly not be the last.

The Faculty Dinner will be held at the end of term and it is hoped that there will be a big attendance of members.

K. V. L. KESTEVEN, Hon. Sec.
FINAL YEAR, 1938.


Second Row.—J. G. H. Hoeben, B.V.Sc. (Senr. House Surgeon), H. McL. Gordon, B.V.Sc. (Parasitology), Dr. H. R. Carne (Path. and Bact.), Dr. R. M. C. Gunn (Surgery), Professor J. D. Stewart (Medicine), F. Whitehouse, B.V.Sc. (Zootechny), Dr. H. G. Belschner (Sheep Diseases), J. W. Newcomb, B.V.Sc. (Jun. House Surgeon).

Front Row.—L. W. Mahaffey, M. S. Anderson, I. J. Cunningham, L. K. Whitten, W. Granger, H. M. Ware.
IMPRESSIONS OF FINAL YEAR STUDENTS, 1938.

(Collected from Nature at great personal risk).

M.S.A.: Despite his fast thinning locks, a buffoon. Somewhat flamboyant in attire. Often amusing, sometimes unintentionally clings, rather precariously at times, to certain outworn and demoded shibboleths. Leads a dog's life, with plenty of Posts.


B.B.: The classic example of the beneficial results of troth plighting. Adopted city: Melbourne. Nose showing signs of wear from continued application to the grindstone.

P.L.B.: A man of much solidity. Self-appointed instructor of the young and not so young. A tireless worker. Has been known to go gay. Adopts paternal attitude towards the opposite sex, which is purely a blind. Often slips on the ice.

E.J.C.: Brachycephalic with prognathous jaw, despite which, has considerable appeal to the lurking maternal. We believe he plays football — God's gift to referees. A popular redhead.

H.C.: Darkly handsome, but matronly figure. Probably Spanish — slings the bull with dexterity and ease of long practice.

I.J.C.: Academician from overseas, noted for his quaint coiffure and behaviour on the night off. A good mixer and possesses an extraordinary chuckle.

A.E.: Curly hair and lustrous eyes — considered musical, but only a little temperamentally. Has a flair for demonstrations.

J.W.E.: Very argumentative. Has had the temerity to contradict his superiors and the foolhardiness to be right and that when a puling Fresher. Always bright.

K.I.F.: A better boy than many. Smokes not at all, drinks a little, talks a lot. Fond of horses, on which she is considered to have a good seat. Very likeable. Rather a trial to House Surgeons inter alia.

F.G.F.: Painstakingly careful. Slow, but sure, except on tennis court, where he is very sure. Will get there the long hard way.


A.W.G.: Hometown: Adelaide. Has mistaken his vocation, the perfect bedside manner. Heart-throb No. 1, but doesn't take advantage of it — a pity. Registers tender solicitude most touchingly when he examines a patient.

T.I.: Belies his air of incorruptible rectitude, has even been guilty of most amusing remarks. Of Arcadian descent Doesn't frivol much, though.

J.W.McL.: A Maorilander, but we must not hold that against him. Infectious laugh, an able lieutenant. Plays golf, among other things and talks well, although not seldom.

L.W.McM.: Burly man from “down south.” Favourite expression “Have you heard this one” — keen golfer, but usually slips about the 19th hole. Has, we consider, most unsuspected depths.

L.W.M.: Quiet and has interesting views on subjects concerning which we are not examined. Heading for the White Coat Brigade.


K.R.: Cheerful, and always friendly. Came from Science on perceiving the light. Tho' a girl, we like her. Has the perfect manner with animals.

W.D.R.: Unpromising exterior hides a heart of gold. Looks, but only sometimes is, tough. We envy him his lucky moonstone charm, or whatever it is that enables him to study in his peculiar way.

B.A.T.: Gentle nature, quiet disposition. Puts up with a lot. Some erudition carefully concealed, but never drive with him unless insured, or unconscious. Also said to take a ball occasionally.
R.T.: Military moustache. We regret the passing of his youth, which was most entertaining while it lasted. Quite good looking, we are told. Rides a motor-bike — 'nuff said!

H.M.W.: Foundation member, for which we are grateful as he is rather helpful to know. Not yet blase, though tending that way.

L.K.W.: Taciturnity enlivened by not a few bright flashes. No vices that we know of, but would probably not bear too close a scrutiny.

YEAR NOTES, 1938.

THIRD YEAR.

Notes That: Among those present are 2 women, 32 men and that strange animal the "Harveven," which may be seen taking coffee almost any morning at the "Onion" or rolling "its own" in the halls of the Vet. School.

This year is still the largest the Faculty has ever known, and as "Time Marches On" each new lecturer says, "Really, I don't know how I'll be able to manage you all." And scratches his head.

Also we have as wide a variety of sportsmen as any year, from shooting and riding men to pole vaulters and hockey players. For exponents of the more legitimate sports, c/o. the Sports Notes for reference to such notables as Newman, Sanders, Watt, Beattie, Taylor, et. alia.

Turning our attention to indoor sports, we have renowned experts in the fields of skating, ping-pong and even wire-pulling.

Academically, the percentage of us to receive posts will remain as a challenge to all-comers for many years.

Finally, as you turn these pages, observe how many of our busy bacteriologists and precise pathologists rank among the contributors of first-class reading matter.

SECOND YEAR.

Have you noticed? The increasing verbosity of members, indicated by the numerous proposers and seconders of votes of thanks, etc., and two members in faculty debating team, viz.: E. Cooper and Denyer?

The sporting ability: Boon, Denyer, Dawling, McClymont, Pile and R. C. Taylor played football for the faculty; Boon, Shepherd and Pile in tennis; R. C. Taylor in boxing; Sapsford, Freeman, Wishart, Shepherd in rowing; McQueen, Denyer, McClymont, R. C. Taylor and Coughlan in athletics — and last, but not least, Jean Scott in the 'Varsity Hockey Team?

Our "faculty spirit" at the Annual Ball.

The sudden disappearance of Jude's moustache. Was it "mouldicide" or the necessity to play Bassanio in S.U.D.S: production.

History being made by providing the first batch of students for "our farm."

That the prosectors (incidentally, the first to be appointed) have relieved the faculty of a much needed common-room.

New milking method one of us introduced at the Farm — two teats in each hand.

FIRST YEAR.

Quantity and quality are desirable features in most things. This year, First Year has shown such a substantial modicum of each than an impartial compilation of its activities presents some difficulties.

In quantity, we number thirty-six, after several fluctuations. The quality speaks for itself. We have among us, a University champion athlete, a first-class club football player and numerous other, but no less enthusiastic satellites of the playing field. Our presence is brightened by a sprinkling of the fairer sex. Well that is, fair enough to make us turn up to 9 o'clock lectures and strive to prove them the weaker sex.

Our faculty spirit was questioned, but the faculty received us into the fold when our reputation was complete, comprising much activity in faculty sport.

The Inter-faculty Boxing team contained three freshers out of four members. The team won the tournament. Praise be upon us in general,
on K. Ferguson, V. Dawson and F. Morley generally, and on F. Morley specifically — he won his division unopposed!

In large numbers, "freshers" turned out to football practice. F. Morley, B. Walker and R. Mitton made the team, the others made the sideline, being better barrackers than "batterers."

"Nobby" Clarke upheld our honour in the athletic field. To win a Varsity championship in one’s fresh year is not a bad effort. So we sing his praises. V. Dawson, F. Morley and E. Officer were less successful interfaculty athletic contenders.

Enough of boxing statistics! Let’s have no more of them!

Quite a flock of little birds have been whispering weird tales about "freshers" and the "farm." Something about freshers spending all the vacations in first year there. Those birds can’t live on this farm; we’d eat them out of house and home within a week. We thought a new "Wailing Wall of Jerusalem" had been built behind the aristocratic edifice of the Veterinary School, but apparently it was only some "freshers" moaning about this proposal.

We were also informed that perhaps more men would be willing to go to the afore-mentioned "farm" on a certain week-end if the women students went also. Everybody agreed heartily and then began to wonder if the remark was a compliment to the women or an insult to the men. It was considered unsolvable, however, as no move was made to include them in the party.

Some of us thought we had an honour conferred on us when we were allowed to join the several Veterinary Sections. It was an honour, but the European situation makes us feel a bit doubtful.

Somebody was kicked while grooming a horse the other day. Reports point to the horse as the offender, while the identity of the recipient of the doubtful honour is strongly suspected. He positively glows when he smells a dead horse in the dissecting room, whilst the sight of a horse’s skeleton causes him to break out into open smiles.

Returning to serious matters. We commiserate with Miss Joyce Rodwell. Appendicitis takes some getting over. Ted Officer has our sympathies and Tracey Sawers, we hope, will soon be amongst us again.

Let us hope we have not detracted from and may we add in the near future to the potency of that rare, old, pre-war vintage, "The Faculty Spirit."

The good wishes of all poor freshers are with the Final Year students in their trials and tribulations and may the patron saint of Veterinary Scientists smile upon them.

SECOND MOBILE VETERINARY SECTION.

Cpt. F. WHITEHOUSE, B.V.Sc., O.C.
Cpt. C. SMITH, B.V.Sc., attached.

S/Sjt. W. GRANGER.
Cpl. N. A. NEEDHAM.

Sjt. H. R. PEISLEY.
Cpl. R. D. BOON.

The Annual Home Training Camp for the year 1937-38 was held at Liverpool, in March, whilst a two-day Bivouac was held concurrently. Work carried out included balling, drenching and bandaging horses, and a visit was paid to the Remount Depot and Veterinary Hospital at Holdsworthy.

The Annual Dance held in conjunction with the 2C.M.V.S. was again a great success socially. The presence of former members of the Unit suggests that it might become an Annual Re-union, at least of those who remain in New South Wales.

N.C.O.’s of this Unit collaborated with the 2C.M.V.S. in presenting a series of short addresses to the Veterinary Society under the general term of "Horsemastership."

During the forthcoming Training Year, it is proposed to hold Orderly Room Parades monthly, to increase the opportunities for general discussions and experience in office routine.
Personnel are looking forward to the eight-day Bivouac to be held at Camden in August, in lieu of Home Training Parades. Skill-at-Arms prizes were awarded to S/Sjt. Granger, Sgt. Peisley and Pte. Fielder.

REPORT ON THE ACTIVITIES OF THE 2nd CAVALRY MOBILE VETERINARY SECTION.

Major H. S. LUCAS, V.D., B.V.Sc., Commanding Officer (C.O.).
H. G. SUNDSTROM, Staff Sergeant (S/Sgt.)
M. S. ANDERSON, Sergeant (Sgt.)
G. W. WARD, Corporal (Cpl)
F. H. WARD, Corporal (Cpl)

The activities of the Unit during this year have been interesting and varied, both from a social and military viewpoint. An outstanding success was the Ball, held by the combined 2nd Cavalry Mobile Veterinary Section and 2nd Mobile Veterinary Section, at the Union Refectory, early in first term. The ballet, staged by members themselves, was a notable feature in the success of the evening. Sgt. Anderson was particularly abandoned in his role of the Ballerina, and went “into his dance” with effortless ease and grace, quite captivating the audience; the other members of the ballet, as seductive houris were enchanting in their cheese cloth dresses. This Ball was voted a great social success; and the Units were pleased to welcome members of the Faculty who attended.

The Unit spent the 9th and 10th April on a Bivouac at Holdsworthy Remount Hospital, and gained valuable Veterinary and military experience, despite the fact that heavy rain interfered with the programme of work.

The Annual Camp was at Camden. This Unit, rated at full strength, together with the 4th Cavalry Mobile Veterinary Section (from Hawkesbury College) and the 2nd Mobile Veterinary Section, marched into Camden Showground and carried out a full programme of work, under Major Lucas, the Camp Commandant.

Included in the work this year were two days’ Field exercises, in which Veterinary collecting posts and an Evacuating station was established. On the first exercise, the 2nd C.M.V.S. marched to Picton and the 4th C.M.V.S. to Appin, and established Mobile Veterinary Sections at suitable sites and stationed advanced collecting posts at suitable points. Casualties were collected by the collecting posts and brought to the Mobile Veterinary Sections who, after suitable attention, sent the horses on to the Veterinary evacuating station at Douglas Park, established by the 2nd M.V.S., under Captain Whitehouse.

A similar exercise was repeated the following day. All units rode about eighty miles on the two days; under service conditions. Visiting officers expressed their satisfaction at the manner in which the work was carried out and at the keenness and interest displayed by personnel of all units in their work. The three troops marched out of camp on August 20th. Interesting work, the ideal camp site and weather conditions combined to make it the most successful camp yet undertaken.

Personnel of 2nd C.M.V.S. are anticipating another interesting Bivouac on 1st, 2nd and 3rd October at Holdsworthy Remount Depot, and also in February, when the unit will encamp at Berry with the 7th L.H. Regiment, at which camp will be ample opportunity for members.

FINAL YEAR WOULD LIKE TO KNOW:—

Who’ll take our place when we’re gone?
Who’s on the Pharmacy?
Where the hell is the blighter?
How we’ll get on next year without our masterful director of anaesthetic
Who taught Chum to sing? Why?
How many peas make five?
What colour sox does the Sergeant wear?
For the past three years one student who has just completed his third year, has been given an opportunity to go to Canberra, for the purpose of gaining practical experience with the Veterinary officers of the Department of Health there. As this practice will be continued from year to year, the animal diseases and methods adopted for their control may be of some interest, especially to members of the junior years.

Veterinary services are carried out by officers of the Department of Health and valuable experience is to be gained in field and in technical work. The latter is carried out in a small laboratory, where samples of milk and clinical material from the Canberra Hospital are also examined.

The milk supply to the city is controlled by the Dairy Society composed of eight dairymen with herds ranging at present from 65 to 100 head. Six of the eight dairies have refrigerating plants installed, and recently a milk depot has been erected.

At weekly intervals, from the dairies and delivery carts, the health inspector takes milk samples on which Breed Clump counts are done. A count of 100,000 bacteria per cubic centimeter or less is allowed in Canberra's milk.

The entire meat supply of the city is killed at the abattoir; where by-products, such as stock foods and fertilizers are also manufactured. From the abattoir valuable data regarding the incidence of disease is readily obtained. Fluke and hydatid are unfortunately, extremely common. Tuberculosis, actinomycosis and caseous lymphadenitis, with occasional cases of cysticerus ovis and sarcosporidiosis are encountered as well.

The most time absorbing part of the work at present is the three monthly agglutination test for Contagious Abortion. Blood samples from some 800 dairy cattle are taken from the jugular vein, using a Bayer venule, which consists of an evacuated tube attached to a fine hypodermic needle, a valve is released when the vein is punctured. Usually only 5 or 6 ccs. of blood are withdrawn from which the necessary 0.5 cc. of serum is readily obtained after standing for a few hours. Routine agglutination tests are done with a critical titre of 1 in. 100. The following day continuation tests are done on positive and suspicious reactors. Reactors are condemned and 50% compensation is paid.

In the first tests done early last year, the percentage of reactors was frequently 20% and in one case 40%, while on the sixth test, about half the herds were clean, including the one which was initially most infected.

An annual tuberculosis test is carried out on all the dairy cattle, using the double intradermal test on a shaved or clipped area on the neck. Tuberculosis is well under control in the territory.

Black disease vaccination is carried out extensively, but in recent years, graziers have been doing more and more for themselves. Automatic syringes are used and the injection made into the medial aspect of the thigh, or more frequently the lateral aspect of the thorax, just behind the elbow. In some of the large sheds, the operation is greatly speeded up by removing several boards from the floor. The operator stands on a plank, so placed that the floor level is waist high. In this way all stooping is avoided and a large number of catchers can be kept busy.

Snail destruction by draining swamps and bluestoning watercourses also helps in holding black disease in check. In the bad old days, one property had an annual mortality between 40% and 60%. This has now been reduced to less than 1% by snail destruction and vaccination.

Worm infestations occasionally cause an alarming mortality, but are usually controlled by appropriate drenching.

There are few districts in Australia that can offer such a variety of experiences to the budding veterinarian and I can assure anyone that ten weeks spent there is certainly not wasted.
CHARGING ABOUT WITH CHUNDAH.—H.E.R.B.

Having heard from sundry sources that there is no better way for a veterinary student to spend a vacation, — should he or she be so fortunate— than that of accompanying an Inspector of Stock in the discharge of his divers duties, we decided to test for ourselves the veracity of this extravagant claim.

Perhaps we were particularly fortunate in our choice of a guide, philosopher and friend. Anyway, we feel that if there is a better way we have yet to discover it, and have no hesitation in recommending a similar course to our fellows.

Our particular companion and instructor proved ideal as such — as had been discovered by quite a number of students of this school before us. “Chundah” operates in a large and flourishing northern district, in which a wide diversity of pastoral and other pursuits are followed, travelling on the average, 2,000 miles per month “on the job.” He is widely known, well liked and vastly respected. Also he is reputed to be something of an “unopposable force” when the occasion demands. The latter might perhaps, be rather aptly illustrated by the story of the unmovable elephant.

A travelling circus was brought to the town. All, that is, but one enormous thick-skinned quadruped. Jumbo, it seems, was unwell. Selecting a nice comfortable main road bridge she settled down to ponder over internal affairs. No efforts of force or cajolery, were of avail in persuading her to change either her mind or her position. Rather reminiscent of friend Horatius, except that there was neither the need nor the room for three. The traffic problem became acute.

Someone with great presence of mind and in the faith that moves mountains, telephoned “Chundah.” All present sighed with relief and relaxed— except the elephant, who was not relieved and was already relaxed. Our friend soon arrived on the field armed (we believe) with a bucket and some three dozen packets of salts. Great things came to pass. If one might be forgiven for referring to the outcome as an “Epsom Handicap,” one might say that Jumbo left the barrier to a good start, but the traffic problem remained precisely where it was. A further job for the variety of faith afore-mentioned. (Who said elephants never forget themselves.) That is our story, anyway, and we are sticking to it!

The periods spent travelling are by no means dreary or wasted. One sees the country, and in our case, Chundah was always pleased to give us practice in judging areas and distances — showing remarkable accuracy himself—and illustrated the desirability of such accomplishments by little anecdotes. Also there was the identification (and collection) of weeds and grasses, and of trees and crops, breeds, etc., points on fencing, stockyards, watering places, inspection of same and of travelling stock. Last, but certainly not least, were the innumerable tales of experiences in the present and former districts, all of which made excellent listening.

One could write reams about local shows, stock sales, diseases seen, methods of killing and autopsy technique, field tests (e.g. in Blue Couch poisoning), grasshoppers, and their control, the office with its huge supply of books, pamphlets and specimens — each of the latter with its own story. Strange requests and interesting cases, people met (e.g., the celebrated “snake man”), freak animals—such as the cow with six legs and the bull with a wide “track” and scarcely any “clearance,” a law case, diatomaceous earth pits, experiments in progress, and many other topics. However, anyone interested would find it far more satisfactory and beneficial and far less boring to obtain such information at first hand.

Of the experiments one might mention that of Dave Gray with Yellow Bighead on “Moonbi.” He was trying the efficacy of “artificial pigments” —painting various preparations of Bismark Brown, lampblack, etc., over the sheep’s faces. Then there were the astonishing findings of Don Walker, with regard to the ubiquitous Foot Louse.

Many were the points we learnt—or had demonstrated to us in the handling of stock, dead and alive—not to mention owners thereof and
others. Not till considerable water has flowed under various bridges will we forget the day when, hot and tired, we entered a large paddock to inspect the cattle scattered therein. Pathetically we raised our eyes in mute appeal to the rubicund countenance of our friend. He took five paces forward, one to the left, and sat on a large log. Then, raising cupped hands to mouth, proceeded to emit an astounding series of noises strangely like a calf—or a bunch of calves—in sore distress. We looked, and wondered. The heat really had been intense. Then we peered further and wondered again. Every beast in sight (they were mainly young females) had raised its head and was looking in our direction!

One or two commenced walking forward, others followed suit, competitive trotting set in, and so was precipitated a veritable stampede us-wards.

We looked at the nearest branch of the nearest tree and did some more wondering. However, the obliging animals merely formed an orderly semi-circle about us and stood quietly for their preliminary inspection.

Before concluding we might mention the case of the surprised stockman of the Breeza Plains. On gazing out over the acres of Fat Hen and Yellow Vine he beheld the well-known car careering wildly hither and thither, weaving curious designs in dust clouds. It was merely ourselves hounding down an elusive fox.

Should anyone read this article and be thereby tempted to spend a similar vacation, we feel our effort will not have been in vain.

**VACATION IN ENGLAND.**

On my arrival I immediately noticed that the conditions are very different to ours. England is a small island with a great number of people and farms. Holdings are tiny and the number of stock carried on a property is few, judged by our standards. Because of this they value their animals more highly than we do, and pay twice the price for a similar animal and also are willing to spend money in securing expert advice more readily than our farmers. There is also more illness amongst stock there, owing to their methods of husbandry which are necessitated by their climatic conditions (especially the long and comparatively severe winter) and the heavier animal population.

In London there are a great number of dogs of all breeds and sizes. By far the great majority are pure-bred and very few mongrels. Ladies look after their dogs like children, and in many cases better than them. They take them everywhere, in trains, buses, into shops, restaurants and theatres. There are many dog shops in the city where one may leave a dog whilst shopping and where one can buy dogs, cats, birds, etc. At present an attempt is being made to eradicate these shops as they are blamed for the spread of disease, especially distemper. Seven out of ten cases brought into the clinic of the Royal College are either distemper or the after effects of distemper.

Veterinary Practitioners at Reading, Windsor, Cambridge and Folkestone I met were young men in good practices, apparently doing well. All had their own shoeing forges with, in the smallest, three blacksmiths. Their main complaint was a great difficulty in obtaining skilled men to work in the forges. These practitioners had assistants, generally two or three, and some were in partnership with another qualified man. The practices were general and were not confined to small or large animals.

In short, the Veterinary profession in England seems to be in a most flourishing condition, and there are many excellent openings for young men. The Colleges are excellent and are well endowed. As a result they are very up-to-date in all respects.
as we found, can show more deceit with its teeth than a politician with his smile. Later, we discussed mules and their ancestry, and even while we did so the camp orderlies were seen retiring to the butchers.

Judging from the fate of the steak at the evening meal, either the cooks did their job well or the boys were ravenously hungry. Anyhow, a certain amount of waiting was necessary then, for the 20/54th Unit were occupying the Drill Hall, in which we were to camp. During this period, coffee was served with biscuits, and so successfull was this first supper that we followed it by one every night.

Another day, we ran a tape over the stables, dairies and calf pens, with almost as much precision as one measures a steed. Later we did weigh some horses. One of the women proved very efficient in estimating their weights.

The dairy was very interesting and though I have lost all my measures of it, I still remember something about a slope of one in sixty of all floors and drains which were of course, constructed of concrete. The cows are fed in the bails from a truck passing down the centre. The truck is filled from the silos, which are about twenty yards away and run straight into the bails to feed the cows.

The fodder of the cows is composed mainly of silage (cereal), hay and an addition of linseed. Mr. Small delivered a very interesting lecture on the production and feeding value of the same.

Attached to the dairy is a butter and cheese factory, in which large quantities of both products are manufactured from College products. Very up-to-date machinery is used here, much of which has been donated for experimental purposes.

We saw the cattle in the bails and later we had the opportunity of judging a few animals on the Score Card. Through lack of experience, (so we hope) we varied widely from the estimates of Mr. Whitehouse, but this was only to be expected.

Mr. Lawrence's wide experience and success as a poultry man was also demonstrated freely in an interesting morning with him.

It was a good week-end, and the Faculty Spirit (those are the only suitable words) was very rife, making it an event memorable and treasured, to say the least, by each and every one of us.

A DAY AT BUNDEMAR. K.V.L.K.

This is merely a description of some events as they occurred in the day's run on the feed lorry at Bundemar.

The country is very, very dry. Trees are losing their leaves from want of water, there is no green except on the homestead lawns and path, where the hose has kept the ground moist.

To start the day's run: it is 4 a.m. The lorry has been loaded the previous night with lucerne, for some of the 1st and 2nd stud, who are given the lucerne ad lib. It is a quiet run in the early morning, dropping one bale here — two there and even three in some places. These sheep are kept in small lots. Occasionally there is a drum of molasses or a bag of lick to be dropped. Back for breakfast at 6.30, with the first 12 miles on the speedo.

At 7 a.m., the day's run usually starts. In the morning, there is 2½ tons of nuts to be scattered to sheep and 4½ miles to be covered. It is dropped in a great circle so as not to cover the same ground twice. There is a list of paddocks on the dash board, with the paddock name, the number of sheep and the feed rate for nuts and lucerne.

Most of the sheep have developed a voracious appetite for nuts, so it is necessary to make a circle around them as quietly as possible and scatter the nuts wide, so that all have a fair chance to get the 8 ounces per sheep.

The afternoon is a light one and some of the feed dumps need retooling with oats, chaff, bran, nuts, salt or molasses for special stud stock, which are fed in hessian troughs.

Mostly, the lucerne is left in the bale, 50 sheep per bale, but in some paddocks where there are 1,000 sheep, the bales must be spread to lessen the loss from overfeeding or smothering.
The jackeroo helps the driver to load, opens the gates, spreads the nuts, lucerne, etc., and keeps his eye open to report on the water troughs, any break in the fences, signs of rabbits, state of mills and tanks and condition of sheep, etc. A diary must be kept on the run, which is good training. The report in for the day, one feels the jolting of the 80 odd miles, but it is 80 odd miles of very necessary work, where inefficiency means starving sheep.

UNOFFICIAL HISTORY OF THE A.A.V.C.  H.G.S.

Camden awakened with a start, one chilly Saturday morning during our last vacation, and collectively rubbed its drowsy eyes. The sight that met its eyes was both staggering and appalling. "Ye Gods," said the silent horror-struck expression of the inhabitants, "the army, and what is worse, the veterinary corps," and thereupon having voiced this unspoken thought, which died, with a rattle in the throat, a concerted rush was made for the nearest hollow log. But the 'varsity lads, with faces all aglow from their morning's ablutions and the keen brisk clean country air, marched with reckless indifference into camp; where jauntily flinging aside their muskets and tunics they stood revealed in their Bond's athletic, as fit a body of men as ever shovelled a pile off the horse lines.

"Is this the army life?" asked the wide-eyed recruits, gazing at the spacious and draughty hall placed at our disposal, "where are the beds, and look, a window is broken, oh what will my mother say?" but one of the veterans of the veterinary corps took his trembling hand and led him to a seat, explained that he must "rough it," and be brave.

However, to proceed. Night found the boys full of beans — or to be explicit, sausages, potatoes, pumpkin and rice — and cavorting about like fleet-footed pachyderms; dancing to the radio. The Sergeants were conveniently camped on the stage end of the hall, out of harm's way. A piano was at hand, on which one-fingered artists tried their skill.

The 2C.M.V.S. get awfully swell-headed. They went over hurdles and not one man was thrown — but! — Once on manoeuvres the C.O. of 2C.M.V.S. suddenly dismounted for action; and did he lead them a dance, down flat on a hard Macadam road, crawling through fences, running down rabbit burrows and what not, scaling telegraph poles and hiding behind blades of grass, so that eventually, the members of this unit decided life wasn't worth living. A Disabled posterior, from contact with the saddle was bad enough, but leaving pieces of epidermis around Camden district on stones, etc., was a bit hot; as a fellow couldn't sleep on his side all night.

We are not enlisted as roughriders; oh well live and learn, and fall only to rise and fall again. The croupous coughing and the asthmatic groanings after lights out from the recumbent sleepers, resembled a locomotive yard.

Boot polish was in great demand, as the recruits discovered, when they were artistically painted black, or brown, and brought to a shine by the dexterous manipulation of the sole of an army boot. The young ladies of Camden Y.W.C.A. gave a dance. Needless to say, the locals were sadly outclassed by the handsome dashing vets., who captivated the hearts of the lasses. One of the Sergeants very prettily thanked the girls for their kindness, and the expression was carried with great acclamation. There were many calls on the medicine chest during the last few days in camp, because friction between two surfaces often leads to disastrous effects. The iodine supply just lasted the camp. A strong resemblance to Rhesus monkeys was also noted.

Up in the mornings at 5.30, there was no need to dress (we were dressed) to keep out that hoary old man — Jack Frost — then mucking-out stables, shovelling manure with great abandon. Bullied by sergeants, yelled at by corporals, sworn at by officers, kicked at by horses, hounded from pillow to post, and then from heap to heap; at last eating breakfast, which tastes as our hands smell — of horses — we rush out and saddle up. More swearing, more cussing, hooves flying all directions, air blue and static with clean, crisp and terse phrases — swearing like a trooper? — No! profaning like an Army Vet!

Who would join the Army?
At the Annual General Meeting on Friday, 1st April, the election of Officers resulted in strong Committees being chosen under the leadership of the President, Professor J. D. Stewart, Dean of the Faculty. Other officers are:—Vice-Presidents: Dr. R. M. C. Gunn, Dr. H. R. Carne, Messrs. F. Whitehouse, R. Webb and J. Hoeben; Hon. Treasurer: G. Thomson; Hon. Secretary and Delegate to the Interfaculty Committee: I. G. Watt.

ACHIEVEMENTS AND OTHERWISE.

We have had a keen year, a very pleasant feature being the strong support given by he younger years, particularly first year, whose members have shown active interest in all sports.

Taking the varied methods of limb-breaking separately and analysing the results, we find that the committees at least, have had some fun, even if the victims have not.

Moral — Be a “big gun.”


A particularly fine effort on the part of these three tough fellows resulted in a full team being entered and battered, but we won the Cup.

The Team was: Bantam — Beattie; Light — Dawson; Welter — Taylor; Middle — Ferguson; Light-Heavy and Heavy — Morley.

Unfortunately, Dawson and Ferguson were eliminated on the first day, both fighting game scraps, but neither was good enough for his opponent.

On the second day, Battling Beattie astonished his fellows, among whom he is regarded as kind but honest, by sailing into his man while his wind lasted. But fatal good nature rather than dyspnoea lost him the verdict when he had the opposition beaten, but the faculty takes off its hat to “Herb.”

Next came Sandy Taylor, who walloped with a will, but condition and an extra round finished the Andrews hopeful. His heart-rending appeal to Referee Wallis who decided on the extra round, quite moved the rows of Vets. behind the ring.

Fred Morley won the light-heavy weight unopposed and for the sake of the extra point, fought in the Heavy. He put up a very game showing against an opponent two stone heavier and much taller, for two rounds, but the opposition was too solid.

POINTS WE NOTED: The very fine muster of Vets. headed by the Dean, Mr. Whitehouse and Mr. Webb. Battling Herbert’s “Well hit, sir!” after the Beattie nasal septum had been forced into the choanae. Sandy’s grin. Scottie’s smelling salts.


The Committee rallied the clan to some purpose and the Vets. played an unheard of number of practice matches against Wesley College, Public Trust and St. John’s College.

Unfortunately, we were not able to field a B Team, as Law wished also to enter one, but this did not prevent at least thirty members from showing great keenness.

The first three games were won — Arts, 23-5; Medicine, 19-12; Law, by default; then came the blow. Engineering were far too good for us in the semi-final and Vet. Science A went down for the first time in four years.

Still, despite wailing and gnashing of teeth there were a few bright spots. The team worked hard and though beaten by a better side, were not disgraced.

We are now in half-mourning.

The team for the year comprised the following:—Sanders, Walker, Pile, Taylors on both wings, Johnson, Milton Denyer, John and Des. Dowling, Bazeley, Wes. Whitten, Williams, Ward, Boon, Morley, Sundstrom, McClymont, Biddle, Watt (captain).

It would be impossible to select any forward for special mention. Everyone did his best. Skeet Sanders and John Dowling took a great deal of punishment in the backs and Bruce Walker and Johnson were always very sound. Bob Taylor is making into a good wing three-quarter.

In the last match we were without Johnson, Pile and Bazeley, while
Morley had to retire early owing to injuries received boxing on the previous day. We also missed Jockey Granger, of the exalted S.R.C. and McManamny, the Melbourne tiger, whose meat inspection interfered with his practices.

The Final last year, which we won, with Bob Chester behind the pack, Joe Ryan sailing in with long legs flying, Ronnie Potts' truly remarkable footwork and "Marcus" Newman's bare bosom is recalled by all of us with regret. Never mind. Next year—.

Members of the Club who played for the University Firsts include Bluey Callaghan, selected for the State and also Reserve for Australia against the All Blacks, Brook Taylor, Newman and Watt. Bruce Walker played first-grade for Parramatta.

The Club must congratulate Callaghan on his fine record while at the Veterinary School, and also thank our reporter, Banks, for describing the matches in Honi Soit.

Rowing: Committee: H. Harris, W. Huddleston, and H. Beattie.

At last the faculty has decided to return to the field of rowing, if that is the correct way to put it.

Anyway, lashed by a very keen committee, Bill Huddleston in particular out to practice among the logs in Blackwattle Bay. As many were new oarsmen, there was a marked rear-elevation complex for some time in the faculty, but at length the epidermis was hardened by a process sacred to the rowing fraternity and the crew settled down to do hard work under Coach C. Rowe, to whom the Faculty is extremely indebted.

Apparently the art of "sitting a boat" is difficult to acquire, and members were observed using various iron railings at the school, learning to balance.

At length, after a strenuous and cold initiation into the mysteries of propelling the frozen human body through shark-infested waters on a piece of shiny bark, the following crew was selected.

Bow, H. Beattie; 2, Mel. Armstrong, 3, Wishart; 4, Thomson, 5, Shepherd; 6, Freeman; 7, Huddleston; stroke, Harris; cox, Sapsford. Emergencies, McQueen; Hagelthorn.

The crew came second after a very game race, being narrowly beaten by Engineering, who boast a much more experienced crew.

We have high hopes of winning this event next year, as the same crew will be available, with the exception of Mel. Armstrong, who is in final year.

Athletics: Committee: J. Gill, R. Biddle and H. Pile.

After much spade work, a strong team was fielded, but unfortunately, other faculties were stronger still.

The team was as follows:

100 Yards: R. I. Taylor.
440 Yards: B. C. Hagelthorn.
880 Yards: J. O. Gill, V. Dawson.
Mile: W. E. Officer, D. Rees.
880 Medley Race: B. C. Hagelthorn, E. A. Farleigh, D. McQueen, R. I. Taylor.
360 Hurdle Relay: R. Coughlan, R. Biddle, R. Denyer, C. Mulhearn.
4 x 110 Relay: McQueen, E. Farling, L. J. Castillo, McClymont.

The results were disappointing, considering the team entered. In the 880 Medley Relay, we were third, High Jump 2nd, a feature being the good jumping of Biddle. Broad Jump 3rd, a total of 4 points.

It is obvious that next year Vet. Science must take its athletics more seriously and training be made a Faculty matter. The committee worked hard and the thanks of the club are due to their fine effort and keenness. We sadly missed Ryan and McLean in the mile.

Tug of War. Once again we strove for the Dean's Cup. Unfortunately some of the bigger men in the faculty are a little shy about appearing in public. However, we fielded a strong team, with Carroll on the anchor end.

By some miscalculation of stresses and strains, the Engineers hauled
us twice in succession in the final, so once again the Cup will have to wait before it returns to its rightful home.

Practice for next year's tug of war team will commence by the Round House in the first week of next year.

**Cricket:** Committee: L. McManamny, H. Pile and D. Dowling.

No matches had been played when Centaur went to press, but we have great hopes.

**Golf:** Committee: L. McManamny, I. J. Cunningham and J. McLean.

This committee does not meet often, as it needs the right atmosphere, but it gets results.

This year, have already beaten Science and are on the way to better things.

This year's team consisted of: Jude, Johns, Biddle, McLean and Robinson. We must congratulate Tim Jude for representing Sydney University against the other centres.

The McManamny Cup and the Staff versus Students match will be played off on the same day, later this term.

**Tennis:** Committee: Shepherd, McLean and Barraclough.

There are two main events in the tennis world, Interfaculty Competition and the Brettingham-Moore Trophy. This year, the latter shield was won by Brian Barraclough and Eric Sheppard from Dick Biddle and John Evans, 3-6:7-5:6-2

In a letter recently, "Bret." wishes the sports club every success and congratulates Brian and Eric.

**Interfaculty Tennis.** Two teams were entered and though neither was successful, the standard of play was very high.

A Team: Biddle and Shepherd; Barraclough and Fielder, met Arts in the first round and were defeated by the narrow margin of three games, sets being equal.

B Team: Evans and Anderson; Boon and Pile. This team easily accounted for Arts B team winning by seven sets to one.

They then met Engineering who proved altogether too good, winning by 8 sets to 0.

**Swimming:** Committee: W. Whitten, F. Williams and H. Harris.

The Interfaculty Swimming Carnival was held at the Olympic Pool. Unfortunately, we performed poorly again this year, gaining only 3 points, W. Whitten winning the diving.

Members should remember that this Carnival is held early in Lent term and that they should return after the Vacation (and perhaps "posts") ready trained to win back the Faculty Premiership.

We must congratulate L. Whitten on winning an Australian Varsity Blue. He retained the Sydney University Diving Championship with W. Whitten runner-up.

**Hockey.** Though there is no Interfaculty Hockey, the Club wishes to congratulate Ric. Lowe and Jock Swan who play for the University Firsts Grade team.

**Social.** Just a mention of the Lady Vets.

It was decided by the sports club to allow our women full membership without payment of any fees, a committee to be set up to govern their side of the sporting activities. So far, they have maintained a grim silence.

Girls, a hearty invitation is advanced to you all to attend the next meeting and see for yourselves how and why things are done.

We congratulate Virginia Osborne on her weekly-goal-getting efforts for the University basket ball firsts and also in the Inter-Varsity Tournament.

Also Lena Donaldson and Jean Scott who play for the Women's Hockey first eleven and not forgetting champion skipper Kath Farr, for her yachting ability.

Concerning Festival Sports Day. Isn't it remarkable what a juvenile effect a gym. dress has?

**Financial.** The Club notes would not be complete without a gentle reminder about subscriptions overdue and also mention must be made of the donation from members of the staff, the Sports Club, and students individually, towards the Swimming Pool. £14 was raised by this means, the result of a very happy thought on the part of the retiring committee.

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